Joint Base Pearl Harbor-Hickam (JBPHH) Public Water System No. HI00000360 & Aliamanu Military Reservation (AMR) Public Water System No. HI0000337

Extended Drinking Water Monitoring Plan: Third Quarterly Report

Sampling Results Report for the JBPHH System (October – December 2024)

21 July 2025

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Acronyms and Abbreviations

ACO	Administrative Consent Order
Army	United States Army
ATSDR	Agency for Toxic Substances and Disease Registry
CDCs	Child Development Centers
COA	Course of Action
CRI	Community Representative Initiative
DOH	State of Hawaii Department of Health
EDB	1,2-Dibromoethane
EDWM	Extended Drinking Water Monitoring
EPA	United States Environmental Protection Agency
JBPHH	Joint Base Pearl Harbor-Hickam
JP-5	Jet Propellant, Grade 5
LTM	Long-Term Monitoring
MCLs	Maximum Contaminant Levels
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
NAH	Navy-Aiea Halawa Shaft
Navy	United States Navy
PAHs	Polycyclic Aromatic Hydrocarbons
PE	Performance Evaluation
PIANO	Paraffins, Isoparaffins, Aromatics, Naphthalenes, and Olefin
PWS	Public Water System
QA/QC	Quality Assurance/Quality Control
RH	Red Hill Shaft
SDS	Safety Data Sheet
SME	Subject Matter Expert
System	Joint Base Pearl Harbor-Hickam Drinking Water Distribution System
TPH	Total Petroleum Hydrocarbon
TPH-D	Total Petroleum Hydrocarbon, Diesel Range Organics
TPH-G	Total Petroleum Hydrocarbon, Gasoline Range Organics
TPH-O	Total Petroleum Hydrocarbon, Oil Range Organics
TTHM	Total Trihalomethanes
U.S.	United States
WQAT	Water Quality Action Team

Section 1. Introduction

This report documents the results of the third quarter (i.e., October – December 2024) of Extended Drinking Water Monitoring (EDWM) of the Joint Base Pearl Harbor-Hickam (JBPHH) Drinking Water Distribution System (System). Drinking water sampling was conducted in accordance with the EDWM Plan developed by the United States (U.S.) Navy (Navy), U.S. Army (Army), and a team of technical and subject matter experts (SMEs).[1,2] The EDWM Plan was implemented immediately following the completion of long-term monitoring (LTM) of the Public Water System (PWS) #HI0000360 and PWS #HI0000337 in March 2024.[3] **Data collected during the third quarter of EDWM show no evidence of JP-5 fuel or other fuels in or impacting the System. The System continues to meet all State and Federal standards.**

The Navy is committed to providing safe drinking water to all JBPHH System users. As part of this commitment, the Navy voluntarily implemented the EDWM program to conduct enhanced drinking water monitoring and a more fuel-related investigatory approach to demonstrating JP-5 and other fuels are not impacting the System. The Navy intends to sample all residences that were not sampled under LTM, ensuring their water was thoroughly investigated. EDWM is one of several steps taken by the Navy to demonstrate the System is no longer impacted by the November 2021 Red Hill release of JP-5 or other fuels.

1.1 Background

The Navy voluntarily initiated the EDWM program and began sampling in April 2024, immediately following the completion of LTM, to ensure that it delivered on its commitment to investigate potential fuel-related contamination in the System. The U.S. Environmental Protection Agency (EPA) approved the final EDWM Plan on 01 November 2024. EDWM incorporates the lessons learned from LTM (e.g., refining analytical methods) and focuses on jet propellent, grade 5 (JP-5)/other fuel-related analytes in order to continue to demonstrate that the November 2021 Red Hill release or any fuel is not impacting the System and continue to ensure the System meets all State and Federal standards and is safe for consumption.

In accordance with the EDWM Plan, the Navy will sample the following locations:

- Waiawa Shaft (entry point to the distribution system): every month for most parameters and quarterly for others. Samples of the source water will be collected pre- and post-chlorination prior to distribution into the System.
- Navy Aiea-Halawa (NAH) Shaft and Red Hill (RH) Shaft raw source water (pre-chlorination) quarterly. Note: These shafts do not provide drinking water to the JBPHH System and are inactive. These samples are collected for information purposes only.
- Houses that were not sampled during LTM will be sampled in each of the 20 Zones on the System (see Figure 1). The Navy will provide residents with the opportunity to have

[1] The EDWM Plan for the JBPHH PWS #HI0000360 and Aliamanu Military Reservation PWS #HI000037 is available at: https://jbphh-safewaters.org/public/JBPHH_EDWM_Plan_17Jun24.pdf.
[2] The EDWM Plan is an evergreen document and will continue to be updated based on field experience and the recommendations of SMEs, Navy and Army leadership, and U.S. Environmental Protection Agency (EPA)/Hawaii Department of Health (DOH). The EDWM Plan was finalized on 23 October 2024. This document reflects the changes in the latest version of the EDWM Plan, however, there may have been revisions to drinking water analyses not reflected in the first quarter dataset. Any discrepancies between the original version of the EDWM Plan and the newest version will be called out.
[3] For the purposes of this Plan, PWS #HI0000360 and PWS #HI0000337 will be considered a single distribution system divided into Zones.

their homes sampled to pursue 100% coverage of remaining residences by the end of the 12-month EDWM. A single drinking water sample will be collected from each residence.

    - Approximately 65% of residences within each Zone were sampled during LTM, leaving approximately 35% to be sampled during EDWM. Note: 100% of the houses in Manana Housing will be sampled during EDWM in order to be consistent with all other Zones. 100% coverage is the overarching goal; however, the Navy will not force residents to have their homes sampled.

- Priority Buildings (i.e., schools, Child Development Centers [CDCs], medical clinics) in all Zones every month; and
- Hydrants in Zones where residences were sampled during the month (hydrants in Zones where residences were not sampled during the month will not be sampled).

EDWM is a surveillance tool intended to identify and evaluate potential JP-5/other fuel-related impacts to continue to demonstrate that the November 2021 Red Hill release (or any other fuel-related concern) is not impacting the JBPHH System. The EDWM is one of the drinking water surveillance efforts that the Navy is implementing to continue to ensure the JBPHH drinking water is safe by meeting all State and Federal drinking water standards. At the start of EDWM, the Navy also implemented the Water Quality Action Team (WQAT; independent of and not required under EDWM) to expand the functionality of the previous Rapid Response Team in order to provide a more robust water quality concern response capability, complementary to EDWM. Additional information regarding EDWM is provided in Appendix A (Frequently Asked Questions).

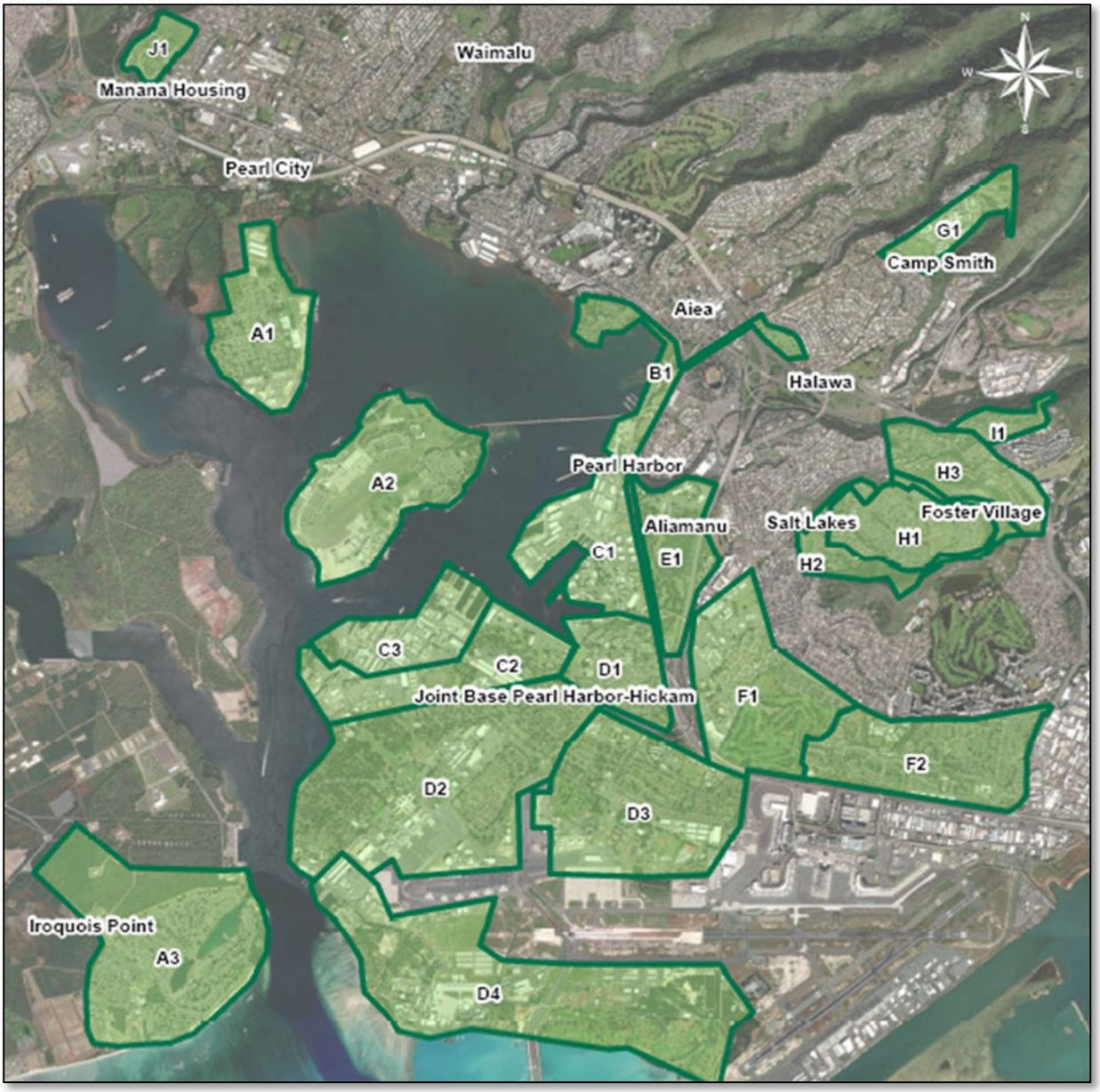


Figure 1. EDWM Sampling Zones

1.2 EDWM Schedule

The third quarter of EDWM sampling began in October 2024 following the conclusion of the second quarter of EDWM in September 2024. In accordance with the EDWM Plan, sampling is performed on a monthly basis and results are reported on a quarterly basis. Summaries of the EDWM sampling, including copies of the EDWM Quarterly Reports, will be posted on https://jbphh-safewaters.org/. Below is a summary of the drinking water sampling completed under EDWM.

Table 1. EDWM Schedule Summary

Sampling Event	Summary of Sampling Activities	Completion Date
First Quarter	25% of remaining houses, priority buildings, and distribution systems	June 2024
Second Quarter	25% of remaining houses, priority buildings, and distribution systems	September 2024
Third Quarter	25% of remaining houses, priority buildings, and distribution systems	December 2024
Fourth Quarter	25% of remaining houses, priority buildings, and distribution systems	March 2025

Section 2. EDWM Sampling Locations

Under EDWM, 4,954 drinking water samples are scheduled to be collected and analyzed. During the third quarter of EDWM (i.e., October – December 2024), 1,543 drinking water samples were collected from residences, schools, CDCs, hydrants (e.g., distribution lines), and other priority buildings (e.g., medical clinics) in accordance with the EDWM Plan and the Water Quality Action Team's (WQAT's) protocol. This brings the total sample count to 4,860 for Quarters 1, 2, and 3. Drinking water samples were collected from 20 of the 20 Zones in accordance with the EDWM Plan.[4] Drinking water samples were collected from 6 of the 20 Zones (i.e., A1, A3, D2, D3, F2, and H1) in accordance with the WQAT's protocol.

Table 2. EDWM Sampling Summary

Location Type	Number of Samples Collected				Total Number of Samples
	1st Quarter (Apr – Jun 2024)	2nd Quarter (Jul – Sept 2024)	3rd Quarter (Oct – Dec 2024)	4th Quarter (Jan – Mar 2025)	
Residences	926	977	804	Sampling to be completed January – March 2025 and reported in the Fourth Quarterly Report.	2,707
Schools	172	175	174		521
CDCs	126	134	126		386
Other Locations	41	43	41		125
Hydrants	376	360	385		1,121
				Total Samples Collected To-Date	**4,860**

Notes:
This table includes EDWM samples (as scheduled in the EDWM Plan), WQAT samples, and re-samples that were analyzed for the full EDWM analyte list. Re-samples that were associated with location-specific water quality investigations and had a targeted analyte list were not included in these counts. In other words, if a location was re-sampled and the re-sample was only analyzed for one analyte, that sample is not included in the counts presented in this table. Re-sample results are presented and discussed in later sections of this report.

The EDWM sampling locations are shown below in Figure 2.

[4] There are no residences in Zones C1 and D4; therefore, no drinking water samples were collected during the third quarter of EDWM. Residential sampling is not planned in these Zones under EDWM; however, residents may request sampling, through the WQAT, if they have water quality concerns.

Figure 2. Third Quarter (October – December 2024) EDWM Sampling Locations

There are 9,883 residences on the System. In LTM, 6,669 residences (67%) were sampled, which left 3,214 residences to be sampled under EDWM. Between October and December 2024, 804 residences (25% of the residences not sampled during LTM) on the System were sampled.[5] A total of 9,377 residences (95% of all residences on the System) have been sampled as of December 2024 (i.e., total number of residences sampled during LTM + EDWM). The total number of samples collected as part of LTM and EDWM and a summary of EDWM completion are summarized in Tables 3 and 4.

[5] Total number of residences sampled does not include any locations that were re-sampled (i.e., three samples in Q2 and eleven samples in Q3) during EDWM as part of additional investigations.

Table 3. Summary of Samples Collected during LTM and EDWM by Location (as of December 2024)

Location Type[1,2]	EDWM Sample Summary			Number of Samples Collected During LTM	Total Number of Samples Collected (LTM + EDWM)
	Number of Samples Collected During EDWM (Apr - Dec)[2]	Estimated Number of Samples Scheduled for EDWM	EDWM Completion Percentage		
Residences	2,518	3,214	78%	6,669	9,187
Schools	493	660	75%	302	795
CDCs	351	504	70%	405	756
Other Locations	107	156	69%	688	795
Hydrants	986	--	--	845	1,831
Total Samples	**4,861**	**--**	**--**	**8,909**	**13,364**

Notes:
[1] This table shows the unique locations that have been sampled as part of EDWM and LTM. This table does not include re-samples to prevent locations from being double counted. The purpose of this table is to track progress towards EDWM completion.
[2] In accordance with Table 2-1 of the EDWM Plan:
Five samples from 11 schools will be collected on a monthly basis.
Two samples from 21 CDCs will be collected on a monthly basis.
One sample from 13 other locations will be collected on a monthly basis.
There is no estimated number of hydrant samples. One sample will be collected from each hydrant each month where residential sampling is being conducted in that zone.

Table 4. Summary of Residential Sampling Completed during LTM and EDWM (as of December 2024)

Zone	Total Number of Residences	Number of Residences Sampled in LTM	Number of Residences Sampled During Each Quarter of EDWM[1]				Total Number of Residences Sampled (LTM + EDWM)	Completion Percentage
			Q1	Q2	Q3	Q4		
A1	635	423	55	46	31	TBD	555	87%
A2	411	303	45	26	10	TBD	384	93%
A3	1,459	959	109	103	160	TBD	1,331	91%
B1	227	167	18	20	11	TBD	216	95%
C1	-	-	-	-	--	TBD	-	-
C2	32	25	5	-	3	TBD	33[2]	100%
C3	6	6	-	2	--	TBD	8[2]	100%
D1	508	342	43	21	14	TBD	420	83%
D2	1,577	1,119	130	186	83	TBD	1,518	96%
D3	912	615	65	110	81	TBD	871	96%
D4	-	-	-	-	--	TBD	-	-
E1	89	84	7	5	1	TBD	97[2]	100%
F1	752	512	54	65	40	TBD	671	89%
F2	1,435	976	126	126	97	TBD	1,325	92%
G1	10	10	-	-	5	TBD	15[2]	100%
H1	918	635	82	95	93	TBD	905[2]	99%
H2	230	150	26	23	26	TBD	225[2]	98%
H3	379	248	40	36	41	TBD	365	96%
I1	135	93	9	24	11	TBD	137[2]	100%
J1	168	2	51	26	32	TBD	111	66%
Total	**9,883**	**6,669**	865	914	739	**TBD**	**9,187**	**93%**

Notes:
[1] Quarterly sample counts include requested WQAT samples. This table shows the unique locations that have been sampled as part of EDWM and LTM. This table does not include re-samples to prevent locations from being double counted. The purpose of this table is to track progress towards EDWM completion.
[2] In some instances, the total number of residences sampled during LTM and EDWM is greater than the total number of residences in that zone. Some residences have been sampled during LTM and EDWM. This could be for several reasons, such as the residence calling into the WQAT Call Center and requesting their residence be sampled by the WQAT or the residence was resampled as part of a water quality investigation (e.g., detection of TPH or other fuel indicator compounds in accordance with Section 5 of the EDWM Plan [if necessary], resampling locations where elevated TPH detections were reported in LTM, or bracket sampling when a TPH detection was reported at a nearby residence).
TBD: to be determined; Total counts will be reported in the future EDWM Fourth Quarter Report.

Section 3. EDWM Sampling Results

This section summarizes the results of the EDWM drinking water samples collected and analyzed during the third quarter of EDWM (i.e., October – December 2024). The following tables summarize the contaminants detected in drinking water samples:[6]

- Table 5 Contaminants Detected in Drinking Water Samples Collected from Residences
- Table 6 Contaminants Detected in Drinking Water Samples Collected from Schools
- Table 7 Contaminants Detected in Drinking Water Samples Collected from CDCs
- Table 8 Contaminants Detected in Drinking Water Samples Collected from Other Locations
- Table 9 Contaminants Detected in Drinking Water Samples Collected from Hydrants
- Table 10 Contaminants Detected in Drinking Water Samples Collected from Source Water (Waiawa Shaft – Post-Chlorination)

Note: Due to size and formatting these tables are included at the end of the report.

3.1 Analyte Exceedances

There were no exceedances of maximum contaminant levels (MCLs) or action levels (ALs) reported in drinking water samples collected during the third quarter of EDWM.

In the second quarter of EDWM, a sample collected from 2417D Challenger Loop on 27 September 2024 resulted in a lead exceedance of 44 ppb, which is over the AL of 15 ppb (Field Sample ID D2-TW-0008333-24092-N). Investigation into this exceedance determined that although it was likely to be a premise plumbing issue, further investigation was warranted through additional sampling. At the time of sampling, the resident was in the process of a Permanent Change of Station (PCS) move. Once the Navy received the preliminary, unvalidated lead results, the Navy contacted the resident to schedule a site investigation and collect a re-sample. The resident requested the Navy wait to collect the re-samples until they were fully moved out of the unit. Once the resident had moved out, the unit's maintenance crew had shut off the water to the unit to accommodate on-going repairs. Water was restored to the unit in December 2024 and the Navy was able to conduct the site investigation and collect re-samples. All faucets at the residence were flushed and resampled on 16 December 2024 during the third quarter of EDWM. The re-samples collected on 16 December 2024 were below the action level. The unit maintenance team and property manager were notified of the re-sample results.

3.2 Total Petroleum Hydrocarbons Detections

Total petroleum hydrocarbons (TPHs) were detected in 0.26% (i.e., 4 of 1,531) drinking water samples collected during the third quarter (i.e., October – December 2024) of EDWM. A summary of TPH detections reported during the third quarter of EDWM are summarized in Tables 11 and 12 below.

[6] These tables include the results from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT.

Table 11. Summary Statistics for Samples Analyzed during Third Quarter (October – December 2024) of EDWM

Summary Statistic	TPH-D	TPH-G	TPH-O	Total TPHs
Number of Samples Analyzed	1,530	1,530	1,530	1,530
Number of Detections	1	2	1	4
Detection Frequency (%)	0.065%	0.13%	0.065%	0.26%
Minimum Detected Concentration (ppb)	87	65	53	53
Maximum Detected Concentration (ppb)	87	143	53	143
Average Detected Concentration (ppb)	87	104	53	87

Notes:
This table includes EDWM samples (as scheduled in the EDWM Plan), WQAT samples, and re-samples.
TPH-D: Total Petroleum Hydrocarbons, Diesel Range Organics
TPH-G: Total Petroleum Hydrocarbons, Gasoline Range Organics
TPH-O: Total Petroleum Hydrocarbons, Oil Range Organics

Table 12. Summary of TPH Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	Total Petroleum Hydrocarbons (Total)	ppb	--[2]	--[2]	1/804	53 – 53 (53)
Schools					0/174	--
Child Development Centers					0/126	--
Non-Residences					0/41	--
Hydrants					3/385	65 – 143 (98)
Waiawa Shaft – Post Chlorination					0/3	--

Notes:
[1] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number of results with detection only.
[2] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH above the method detection limit (MDL) will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.

During LTM the detected concentrations ranged between 50 ppb and 256 ppb with an average concentration of 73 ppb. During LTM Period 6, the frequency of TPH detections increased, primarily in the diesel-range organics (TPH-D). None of these detections has exceeded the DOH's incident-specific parameter (ISP) level of 266 ppb. Since October 2023, the Navy has proactively worked with EPA and DOH on actions to investigate these low-level TPH detections in drinking water samples collected from the JBPHH System. These actions have included inspection and sampling of hot water heaters and interior faucets to ensure there is no contaminant buildup, as well as collection of samples from various points throughout the System.

Total petroleum hydrocarbons (TPHs) results represent all hydrocarbons present in that sample and are not necessarily fuel-related (known as petrogenic). TPHs are also naturally occurring biogenic (e.g., bacteria, algae) or pyrogenic (e.g., produced by combustion). JP-5 (i.e., the fuel released from Red Hill in November 2021) contains no chemicals in the TPH-O range. A detection of TPH-O is likely associated with location-specific impacts, such as lubricants used to maintain a fire hydrant and not JP-5.

Consistent with industry standards, common food-grade lubricants (e.g., white mineral oil) are used to service hydrants throughout the JBPHH System. Food-grade, means they are safe for incidental contact with food or animal products as long as they do not exceed certain concentrations. As water passes through the hydrant, it may come in contact with any residual lubricants. These lubricants will be reported as TPH-O by the laboratory if they are present in the sample. The Safety Data Sheet (SDS) for the food-grade lubricants used on the JBPHH System are provided as Appendix B.

During the week of 29 January 2024, an interagency team comprised of SMEs from the EPA, DOH, Navy, and Navy contractors met to discuss low-level TPH detections reported in drinking water samples collected from the System. Investigation into the low-level TPH detections indicated these results were likely attributed to a reaction between chlorine in the water (from treatment) and a surrogate used in the lab when analyzing the samples. The Navy voluntarily developed the EDWM Plan to analyze drinking water samples using a revised analytical method following the completion of LTM.[7] TPH results are consistent between the first, second and third quarters of EDWM. The detection frequencies for the first, second and third quarters are 0.24%, 0.30%, and 0.26% respectively, with most detections conclusively being related to cross-contamination from incidental contact in the field and/or lab or a food-grade lubricant associated with hydrants. There has been no indication of fuel-related impacts in the System. The table below compares TPH results between LTM and the first three quarters of EDWM.

Table 13. Summary of TPH Detections Reported during EDWM and LTM

Sampling Period	Contaminant	Units	No. of Detects out of Samples	Minimum – Maximum (Average)	Detection Frequency	
					Detected Less than or Equal to MRL	Detected Greater than MRL
LTM	TPH	ppb	2,653/8,668 (31%)	50 – 256 (73)	2,033/2,653 (77%)	622/2,653 (23%)
First Quarter of EDWM			4/1,641 (0.24%)	49 – 1,552 (450)	2/4 (50%)	2/4 (50%)

[7] For more information on the low-level TPH detections observed during LTM and the results of the investigation into these results, see the Summary of Technical Memorandum Regarding Low-Level Hydrocarbon Detections Observed During Long-Term Monitoring at: https://jbphh-safewaters.org/public/Tech_Memo_JBPHH_LOE's_LTM_TPH_Detects_Redacted_Rev.pdf.

Sampling Period	Contaminant	Units	No. of Detects out of Samples	Minimum – Maximum (Average)	Detection Frequency	
					Detected Less than or Equal to MRL	Detected Greater than MRL
Second Quarter of EDWM	TPH	ppb	5/1,689 (0.30%)	64 – 390 (158)	2/5 (40%)	3/5 (60%)
Third Quarter of EDWM			4/1,530 (0.26%)	53 – 143 (87)	2/4 (50%)	2/4 (50%)
Fourth Quarter of EDWM			TBD	TBD	TBD	TBD

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
[2] For additional information LTM period summary reports are available for review at jbphh-safewaters.org.

In accordance with the final EDWM plan, when TPH is detected at a concentration greater than the method detection limit (MDL), and/or where JP-5/other fuel-related indicator compounds are greater than the MRL, additional investigation (in accordance with Course of Action [COA] 3[8] in Section 5.2.3 of the EDWM Plan) is conducted. This investigation includes:

- An initial assessment to verify that the TPH/fuel-related indicator compounds results reported by the laboratory are not associated with blank contamination (i.e., method blank, field blank, or blind blank). If the results are not associated with blank contamination, the evaluation proceeds to Tier 1.
- A Tier 1 screening includes a detailed review of the laboratory report to determine if the detection is due to laboratory contamination, a petrogenic source (e.g., JP-5/other fuel-related analytes), a non-petrogenic source, or inconclusive. If the detection is not due to a JP-5/other fuel-related petrogenic source, then the Tiered evaluation will STOP at Tier 1. The results of this analysis will be documented in a Technical Memorandum.[9]

A summary of TPH detections reported during the third quarter of EDWM is provided below in Table 14.

Table 14. Summary of TPH Detections Reported during Third Quarter (October – December 2024) of EDWM

Zone	Location Type	Address	Sample Date	Analyte	Result (ppb)	Result of Initial Assessment/ Tier 1 Analysis
A3	Residence	6474A 102nd Street	30-Dec 2024	TPH-O	53.1 J	This detection is likely due to incidental contamination introduced at the time of sample collection or in the laboratory. A Tier 2 analysis was recommended to confirm this potential source.
D3	Hydrant	Hydrant 222	24-Dec 2024	TPH-D	87.4	This detection is likely due to incidental contamination introduced at the time of sample collection or in the laboratory. A Tier 2 analysis was recommended to confirm this potential source.

[8] During the first and second quarter of EDWM (i.e., October – December 2024) the EDWM Plan was not approved and JP-5/other fuel-related indicator compounds that are greater than the MRL were not evaluated. The EDWM Plan was approved during the third quarter of EDWM and COA 3 in Section 5.2.3 of the EDWM Plan has been applied during this quarter.
[9] The Navy may elect to perform additional analysis (i.e., Tier 2 analysis) on some samples if the results of the Tier 1 assessment concludes that the Method 8015 TPH extract detection may be due to a JP-5/other fuel-related petrogenic source. The Tier 2 analysis is voluntary and is not part of the EDWM.

Zone	Location Type	Address	Sample Date	Analyte	Result (ppb)	Result of Initial Assessment/ Tier 1 Analysis
J1	Hydrant	Hydrant 2A[1]	22-Oct 2024	TPH-G	143	Isopropyl alcohol, which is the disinfectant used in the field prior to sample collection, was confirmed in the sample. Therefore, the detection is associated with field contamination. A Tier 2 analysis was recommended to confirm the potential source of this detection.
J1	Hydrant	Hydrant 2A[1]	22-Oct 2024	TPH-G	64.5[2]	Isopropyl alcohol, which is the disinfectant used in the field prior to sample collection, was confirmed in the sample. Therefore, the detection is associated with field contamination. A Tier 2 analysis was recommended to confirm the potential source of this detection.

Notes:
[1] Hydrant 2A is also known as Hydrant 123 (i.e., Site ID: MN-HYD0002A).
[2] Hydrant 2A had a TPH-G detection in the corresponding field duplicate collected on 22 October 2024 (i.e., Field Sample ID No. J1-DL-0018352-24275-3-N).

Each TPH detection was investigated further, to determine if the TPH result was related to JP-5/other fuel-related analytes in the System. Below is a summary of the results of the additional investigation conducted for TPH detections reported during the third quarter (i.e., October – December 2024) of EDWM:

1. **6474A 102nd Street (Zone A3)**
   - TPH-G was detected at 53.1 ppb, in the sample collected from 6474A 102nd Street (Zone A3) on 30 December 2024 (Field Sample ID No. A3-TW-0016098-24092-N). EPA was notified of the detection on 04 January 2025, after the Navy received preliminary results from the analytical laboratory on 03 January 2024. After the preliminary results were received, the Navy initiated a Tier 1 investigation. Results of the Tier 1 evaluation for 6474A 102nd Street are summarized in Appendix C. Investigation into this detection confirmed it was associated with heavy lubricant patterns present in the collected sample, and not associated with JP-5/other fuel-related analytes. On 10 January 2025, the Navy voluntarily initiated a Tier 2 analysis (i.e., Paraffins, Isoparaffins, Aromatics, Naphthalenes, and Olefin [PIANO] analysis), and the location was resampled. The results of the resample collected on 10 January 2025 were non-detect for TPHs at the original fixture as well as two adjacent fixtures. Results of the Tier 2 analysis evaluation will be documented in a separate technical memorandum.
2. **Hydrant 222 (Zone D3)**
   - TPH-D was detected at 87.4 ppb in a field duplicate sample collected from Hydrant 222 (Zone D3) on 24 December 2024 (Field Sample ID No. D3-DL-0017730-24336-3-N). EPA was notified of the detection on 27 December 2024, when the Navy received preliminary results from the analytical laboratory. After the preliminary results were received, the Navy initiated a Tier 1 investigation. Results of the Tier 1 evaluation for Hydrant 222 are summarized in Appendix C. Investigation into this detection confirmed it was not associated with JP-5/other fuel-related analytes. On 27 December 2024, the Navy voluntarily initiated a Tier 2 analysis (i.e., PIANO analysis), and the location was resampled. The results of the resample and the parent sample collected on 24 December 2024 were non-detect for TPHs. Results of

the Tier 2 analysis evaluation will be documented in a separate technical memorandum.

3. **Hydrant 123 (2A) (Zone J1)**
   - TPH-G was detected at 143 ppb and 64.5 ppb in the original and field duplicate samples collected from Hydrant 123 (also referred to as Hydrant 2A, Zone J1) on 22 October 2024 (Field Sample ID No. J1-DL-0018352-24275-N; J1-DL-0018352-24275-3-N). EPA was notified of the detections on 31 October 2024. After the preliminary results were received, the Navy initiated a Tier 1 investigation. Results of the Tier 1 evaluation for Hydrant 2A are summarized in Appendix C. Investigation into this detection confirmed it was associated with field contamination. Results of the Tier 1 analysis confirmed the detection of isopropyl alcohol, which was the disinfectant used prior to sampling. On 01 November 2024, the Navy voluntarily initiated a Tier 2 analysis (i.e., PIANO analysis), and the residence was resampled. The results of the resample collected at the location on 01 November 2024 were non-detect for TPHs. The results of the Tier 2 analysis will be documented in a separate technical memorandum.

Locations where TPH was detected during the third quarter (i.e., October – December 2024) of EDWM are shown below in Figure 3.

Figure 3. Third Quarter (October – December 2024) EDWM TPH Detection Locations

The four TPH detections occurred in Zones A3, D3, and J1.[10] These samples were not co-located and were surrounded by locations where TPHs were not detected. Aside from the two samples from Hydrant 2A (Zone J1), the other detections are unlikely to be associated with field contamination because these samples were collected on different dates (i.e., 22 October 2024 versus 24 December and 30 December 2024). TPHs were not detected in other drinking water samples collected on similar dates and times as the three detections in Zones A3, D3, and J1.

Three of the four detections occurred at hydrants, where common food-grade lubricants are used to service hydrants on the System. These lubricants, which are used throughout the JBPHH System, contain mineral oils that will be identified as TPH-O by the lab (see Appendix B for the SDS for the food-grade lubricants used throughout the JBPHH System). Additionally, isopropyl alcohol is a chemical that is utilized to decontaminate hydrant fittings prior to sampling. Further investigation into the Hydrant 2A and Hydrant 222 detections concluded they are not associated with JP-5/other fuel-related analytes in the System and are localized, location-specific incidents.

[10] There were four total TPH detections, with one TPH detection a field duplicate in Zone J1 (i.e., Field Sample ID No. J1-DL-0018352-24275-3-N).

One of the four detections occurred at a residence. The detection at 6474A 102nd Street is attributed to premise plumbing issues related to household lubricants. The initial investigation into this detection concluded that it is not associated with JP-5/other fuel-related analytes in the System.

3.3 Other Analyte Detections

Nine additional analytes were detected in drinking water samples collected during the third quarter of EDWM (i.e., October – December 2024): copper, lead, mercury, benzo(a)pyrene, naphthalene, phenanthrene, benzo(g,h,i)perylene, 1,2-dibromoethane (EDB), and total trihalomethanes (TTHM). Results for these chemicals were compared to MCLs/ALs. All results were below their respective MCL and AL.

A summary of detected analytes reported during the third quarter of EDWM is provided below in Table 15.

Table 15. Summary of Other Analyte Detections Reported during Third Quarter (October – December 2024) of EDWM

Contaminants	Units	Screening Level	No. Detects out of Samples	Minimum – Maximum (Average)
1,2-Dibromoethane (EDB)	ppb	0.05	1/117 (0.85%)	0.02 – 0.02 (0.02)
Benzo(g,h,i)perylene	ppb	--[2]	1/1,530 (0.065%)	0.4 – 0.4 (0.4)
Benzo(a)pyrene	ppb	0.2	26/1,530 (1.7%)	0.01 – 0.035 (0.019)
Lead	ppb	15	681/1,145 (59%)	0.13 – 4.8 (0.3)
Mercury	ppb	2	8/1,145 (0.7%)	0.025 – 0.095 (0.053)
Copper	ppb	1,300	1,142/1,145 (99.7%)	0.63 – 287 (30)
Phenanthrene	ppb	--[2]	1/1,530 (0.065%)	0.29 – 0.29 (0.29)
Naphthalene	ppb	--[2]	1/1,530 (0.065%)	1.3 – 1.3 (1.3)
Total Trihalomethanes[1]	ppb	80	881/1,530 (58%)	0.25 – 43 (2.2)

Notes:
[1] Total trihalomethanes (TTHM) include the following analytes: chloroform, bromoform, bromodichloromethane, dibromochloromethane.
[2] There is no established MCL.

TTHMs are associated with drinking water disinfection and were included in EDWM to continue monitoring overall water quality in the System. No MCL exceedances have been reported for TTHMs. Copper and mercury are not associated with JP-5 fuel; however, these analytes were included in EDWM due to detections reported during LTM and to support the evaluation of overall drinking water quality and compliance with the Safe Drinking Water Act (SDWA). No MCL or AL exceedances have been reported for Mercury or Copper. No additional investigation into these analytes was warranted during EDWM. The Navy will continue sampling and analyzing for these analytes to ensure results are below the respective MCL and AL.

Five of the analytes (i.e., benzo[a]pyrene, EDB, naphthalene, benzo(g,h,i)perylene, and phenanthrene) are JP-5/other fuel-related indicator compounds. Benzo(a)pyrene, EDB, and Naphthalene were detected above their respective MRLs and, in accordance with Course of Action [COA] 3 in Section 5.2.3 of the EDWM Plan, the Navy conducted a voluntary Tier 2

analysis. A summary of the detections of JP-5/other fuel-related indicator that triggered a Tier 2 analysis during the third quarter of EDWM (i.e., October – December 2024) is presented below in Table 16.[11]

Table 16. Summary of JP-5/Other Fuel-Related Indicator Compounds Detections Reported during Third Quarter (October – December 2024) of EDWM

Zone	Location Type	Address	Sample Date	Analyte	Result (ppb)	Result of Initial Assessment/ Tier 1 Analysis
A2	Non-Residence	Building 55, BARRACKS EM	5-Dec 2024	Benzo(a)pyrene	0.025 J	The initial assessment of the detection determined that the results were not indicative of JP-5. A Tier 2 analysis was recommended to confirm.
A3	Residence	6069A Heron Avenue	11-Nov 2024	Naphthalene	1.3	The Navy elected to conduct a Tier 2 at this location to confirm the potential source.
D2	Hydrant	FH:429	11-Dec 2024	Benzo(a)pyrene	0.025	This detection is likely due to incidental contamination introduced at the time of sample collection or in the laboratory. A Tier 2 analysis was recommended to confirm this potential source.
D2	Hydrant	FH:519	11-Dec 2024	Benzo(a)pyrene	0.035	This detection is likely due to incidental contamination introduced at the time of sample collection or in the laboratory. A Tier 2 analysis was recommended to confirm this potential source.
D3	Child Development Center	1586H, Child Development Center-Hickam Main CDC (80 Liliwai St)	1-Nov 2024	Benzo(a)pyrene	0.026	This detection is likely due to incidental contamination introduced at the time of sample collection or in the laboratory. A Tier 2 analysis was recommended to confirm this potential source.
D4	Hydrant	FH 2390	24-Dec 2024	Benzo(a)pyrene	0.022	This detection is likely due to incidental contamination introduced at the time of sample collection or in the laboratory. A Tier 2 analysis was recommended to confirm this potential source.
F1	Hydrant	FH ID: FH:37A	17-Oct 2024	1,2-Dibromoethane (EDB)	0.02	This detection is not fuel related. This detection is likely associated with a non-petrogenic localized issue and is not present in the distribution system. A Tier 2 analysis was recommended to confirm this potential source.

[11] As the EDWM Plan was not approved until 23 October 2024 there were several detections above the MRL during the third quarter of EDWM that did not trigger a Tier 2, due to adjustments in the analysis protocols.

Zone	Location Type	Address	Sample Date	Analyte	Result (ppb)	Result of Initial Assessment/ Tier 1 Analysis
J1	Residence	3771 Elm Drive	26-Nov 2024	Benzo(a)pyrene	0.034	The initial assessment of the detection determined that the results were not indicative of JP-5. A Tier 2 analysis was recommended to confirm.

Each of the JP-5/other fuel-related indicator compound detections above the MRL were investigated further, to determine if the result was related to JP-5/other fuel-related analytes in the System. Below is a summary of the results of the additional investigation conducted for the JP-5/other fuel-related indicator compound detections reported during the third quarter (i.e., October – December 2024) of EDWM:

1. **Building 55 (Zone A2)**
   - Benzo(a)pyrene was detected at 0.025 ppb, in the sample collected from Building 55 (Zone A2) on 05 December 2024 (Field Sample ID No. A2-TW-0014271-24336-N). The EPA was notified of the detection on 12 December 2024, after the Navy received preliminary results from the analytical laboratory on 11 December 2024. After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results for the Tier 1 evaluation of Building 55 are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. The results of the Tier 2 analysis (i.e., PIANO analysis) evaluation will be documented in a separate technical memorandum.
2. **6069A Heron Avenue**
   - Naphthalene was detected at 1.3 ppb, in the sample collected from residence 6069A Heron Avenue (Zone A3) on 11 November 2024 (Field Sample ID No. A3-TW-0016239-24092-N). After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results of the Tier 1 evaluation for 6069A Heron Avenue are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. Results of the Tier 2 analysis (i.e., PIANO analysis) evaluation will be documented in a separate technical memorandum.
3. **FH:429**
   - Benzo(a)pyrene was detected at 0.025 ppb, in the sample collected from Hydrant 429 (Zone D2) on 11 December 2024 (Field Sample ID No. D2-DL-0000574-24336-N). After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results of the Tier 1 evaluation for Hydrant 429 are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. Results of the Tier 2 analysis (i.e., PIANO analysis) evaluation will be documented in a separate technical memorandum.
4. **FH:519**
   - Benzo(a)pyrene was detected at 0.035 ppb, in the sample collected from Hydrant 519 (also referred to as Hydrant 79, Zone D2), on 11 December 2024 (Field Sample ID No. D2-DL-0017714-24336-N). After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results of the Tier 1 evaluation for Hydrant 519 are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. Results of the Tier 2 analysis

(i.e., PIANO analysis) evaluation will be documented in a separate technical memorandum.

5. **Building 1586H, Child Development Center-Hickam Main CDC (80 Liliwai St):**
   - Benzo(a)pyrene was detected at 0.026 ppb, in the sample collected from Building 1586H, Child Development Center-Hickam Main CDC (80 Liliwai St) (Zone D3), on 01 November 2024 (Field Sample ID No. D3-TW-0015143-24306-N-2). After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results of the Tier 1 evaluation for Building 1586H CDC are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. Results of the Tier 2 analysis (i.e., PIANO analysis) evaluation will be documented in a separate technical memorandum.
6. **Hydrant 2390**
   - Benzo(a)pyrene was detected at 0.022 ppb, in the sample collected from Hydrant 2390 (Zone D4), on 24 December 2024 (Field Sample ID No. D4-DL-0017802-24336-N). The EPA was notified of the detection on 07 January 2025, after the Navy received preliminary results from the analytical laboratory on 06 January 2025. After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results of the Tier 1 evaluation for Hydrant 2390 are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. Results of the Tier 2 analysis (i.e., PIANO analysis) evaluation will be documented in a separate technical memorandum.
7. **Hydrant 37A**
   - 1,2-Dibromoethane (EDB) was detected at 0.02 ppb, in the sample collected from Hydrant 37A (Zone F1), on 17 October 2024 (Field Sample ID No. F1-DL-0017724-24275-N).[12] After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results of the Tier 1 evaluation for Building Hydrant 37A are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. On 27 November 2024, the Navy voluntarily conducted a Tier 2 analysis (i.e., PIANO analysis), and the location was resampled. Hydrant 37A was flushed and resampled on 27 November 2024 for EDB. The results of the resample were non-detect for all analyzed analytes. Results of the Tier 2 analysis evaluation will be documented in a separate technical memorandum.
8. **3771 Elm Drive**
   - Benzo(a)pyrene was detected at 0.034 ppb, in the sample collected from 3771 Elm Drive (Zone J1), on 26 November 2024 (Field Sample ID No. J1-TW-0018183-24092-N). The EPA was notified of the detection on 07 December 2024, after the Navy received preliminary results from the analytical laboratory on 26 November 2024. After the preliminary results were received, the Navy initiated a Tier 1 investigation. The results for the Tier 1 evaluation for 3771 Elm Drive are summarized in Appendix C. An initial assessment and Tier 1 analysis of the sample indicated that the detection is not fuel related. Results of the Tier 2 analysis (i.e.,

[12] EDB was not included in the original EDWM Plan (dated April 2024) and was added to the EDWM analyte list in June 2024. EDB was analyzed for at this location on 18 June 2024 and was detected at 0.0085 J ppb (discussed in the Second Quarterly Report). EDB was detected at this location on 18 September 2024 and 17 October 2024. This is the only location during EDWM where EDB has been detected.

PIANO analysis) evaluation will be documented in a separate technical memorandum.

Three of the analytes: copper, mercury and TTHMs are related to water quality and were not evaluated further as these analytes are not associated with JP-5/other fuels. Additionally, during LTM copper was found to be related to premise plumbing, with a high frequency of detections throughout the System. TTHM, is a byproduct of drinking water disinfection, and is not a JP-5/other fuel-related analyte. The remaining six analytes (i.e., benzo[a]pyrene, lead, EDB, naphthalene, benzo[g,h,i]perylene, and phenanthrene) were evaluated in further detail due to their potential association with fuels and the results are summarized below.

Benzo(a)pyrene

Benzo(a)pyrene was added to the EDWM analytical list as a potential fuel indicator compound. Benzo(a)pyrene is not associated with JP-5 but may be associated with other fuels.[13] However, the presence (i.e., detection) of benzo(a)pyrene does not necessarily mean fuel is present in water. Benzo(a)pyrene is one of many polycyclic aromatic hydrocarbons (PAHs) which are associated with many human activities and natural processes. Benzo(a)pyrene, and other PAHs, are formed during the burning of fossil fuels, motor vehicle exhaust, industrial processes, or the burning of organic matter. Benzo(a)pyrene is naturally occurring during forest fires and in volcanoes which can impact groundwater used as a source of drinking water. The most common source of benzo(a)pyrene in drinking water is adsorption from asphalt and coal tar linings in pipes and storage tanks within distribution systems. Benzo(a)pyrene results for the third quarter of EDWM are summarized below in Table 17.

Table 17. Summary of Benzo(a)pyrene Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	Benzo(a)pyrene	ppb	0.2	MCL	12/804 (1.5%)	0.01 – 0.034 (0.018)
Schools					3/174 (1.7%)	0.012 – 0.019 (0.016)
Child Development Centers					1/126 (0.79%)	0.026 – 0.026 (0.026)
Non-Residences					1/41 (0.71%)	0.025 – 0.025 (0.025)
Hydrants					9/385 (2.3%)	0.011 – 0.035 (0.019)
Waiawa Shaft – Post Chlorination					0/3 (0%)	–

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number of results with detection only.

Benzo(a)pyrene was detected in 1.7% (26 of 1,530) of the drinking water samples collected during the third quarter of EDWM, where concentrations ranged from 0.01 to 0.035 ppb with an average detected concentration of 0.019 ppb. Seventeen out of 26 detections (65%) were less than or equal to the MRL of 0.02 ppb and 9 out of 26 detections (35%) were greater than the

[13] Sixteen JP-5 fuel product samples were collected from Red Hill tanks in July 2023 and analyzed to determine the chemical makeup of JP-5 fuel that impacted the System. Benzo(a)pyrene was not detected in any of those samples (see Supplement A of the EDWM Plan).

MRL during the third quarter of EDWM. A summary of benzo(a)pyrene detections throughout EDWM and LTM is included below in Table 18.

Table 18. Summary of Benzo(a)pyrene Detections Reported during EDWM and LTM

Sampling Period	Contaminant	Units	No. of Detects out of Samples	Minimum – Maximum (Average)[1]	Detection Frequency	
					Detected Less than or Equal to MRL	Detected Greater than MRL
LTM[2]	Benzo(a)pyrene	ppb	234/8,636 (2.7%)	0.01 – 0.13 (0.034)	137/234 (59%)	97/234 (41%)
First Quarter of EDWM			95/1,641 (5.8%)	0.011 – 0.036 (0.018)	75/95 (80%)	20/95 (21%)
Second Quarter of EDWM			91/1,680 (5.4%)	0.01 – 0.033 (0.017)	73/91 (80%)	18/91 (20%)
Third Quarter of EDWM			26/1,530 (1.7%)	0.01 – 0.035 (0.019)	17/26(65%)	9/26(35%)
Fourth Quarter of EDWM			TBD	TBD	TBD	TBD

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
[2] For additional information LTM period summary reports are available for review at jbphh-safewaters.org.

Detected concentrations ranged from 0.01 ppb and 0.035 ppb during the third quarter of EDWM with an average concentration of 0.019 ppb, similar to the reported detections in the first and second quarters of EDWM and in LTM. In each quarter of EDWM, the majority of detections (i.e., detections reported near the MRL) were low, however, the trends seen during the third quarter of EDWM were more similar to those seen during LTM, with 65% of samples being less than or equal to the MRL of 0.02, compared to 59% during LTM, and 80% as seen in the first and second quarters of EDWM. All detections of benzo(a)pyrene are below the MCL of 0.2 ppb, and no exceedances of benzo(a)pyrene were reported during LTM, or throughout the first, second, and third quarters of EDWM.

Figure 4. Third Quarter (October – December 2024) EDWM Benzo(a)pyrene Detection Locations

The detections were observed throughout the System and were not limited to one Zone or general area (see Figure 4). Locations where benzo(a)pyrene was detected are surrounded by locations that were sampled and reported as non-detects, which indicates that there is not a system-wide impact or source. **TPHs were not detected at all locations where benzo(a)pyrene was detected**. The Navy will continue to monitor benzo(a)pyrene concentrations in the System and investigate the cause or source of these detections. The results of this investigation will be documented in a technical memorandum and submitted to EPA/State of Hawaii, Department of Health (DOH) for review and discussion.

Lead

Lead was detected during LTM; therefore, lead was added to the EDWM analytical list; however, lead is not associated with JP-5. The most common sources of lead in drinking water are pipes (e.g., cast iron or other metal pipes with lead solder), faucets, and fixtures in the home. Lead can also be naturally occurring, resulting in low-level concentrations of lead in drinking water. Naturally occurring lead is not considered a primary source in the System because lead has not been detected in pre-chlorination Waiawa Shaft (source water). Lead was detected in a post-chlorination sample from Waiawa Shaft during the first quarter of EDWM at 0.16 ppb which is lower than concentrations that have been observed throughout EDWM in the System. Lead can

enter drinking water when plumbing materials and fixtures that contain lead start to corrode. Lead results for the third quarter of EDWM are summarized below in Table 19.

Table 19. Summary of Lead Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	Lead	ppb	15	AL	498/804 (62%)	0.13 – 4.4 (0.29)
Schools					99/174 (57%)	0.13 – 4.8 (0.28)
Child Development Centers					60/126 (48%)	0.13 – 1.4 (0.38)
Non-Residences					24/41 (59%)	0.13 – 0.92 (0.32)
Hydrants					n/a[2]	n/a[2]
Waiawa Shaft – Post Chlorination					n/a	n/a

Notes:
[1] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
[2] In accordance with the EDWM Plan, hydrants are not analyzed for lead
n/a = Not analyzed

Lead was detected in 681 of the 1,145 (59%) drinking water samples collected during the third quarter (i.e., October – December 2024) of EDWM.[14] During third quarter of EDWM, 610 out of 681 (90%) were less than or equal to the MRL (i.e., detected at or below 0.5 ppb) and above the MDL of 0.13 ppb, and 71 out of 681 detections (10%) were reported above the MRL (i.e., detected above 0.5 ppb). Though the majority of detections were less than or equal to the MRL, only 14% (92 of 681) were within 10% of the MDL indicating that the detections of lead were not clustered around the detection limit. This is similar to the trends observed throughout the first two quarters of EDWM and LTM, with the exception of the higher overall detection frequency (70%) and percentage of detections above the MRL during LTM (23%). A summary of lead detections throughout EDWM and LTM is included below in Table 20.

[14] In accordance with the EDWM Plan, hydrants are not analyzed for lead.

Table 20. Summary of Lead Detections Reported during EDWM and LTM

Sampling Period	Contaminant	Units	No. of Detects out of Samples	Minimum – Maximum (Average)[1]	Detection Frequency	
					Detected Less than or Equal to MRL	Detected Greater than MRL
LTM[2,3]	Lead	ppb	5,688/8,131 (70%)	0.13 – 83 (0.59)	4,362/5,688 (77%)	1,326/5,688 (23%)
EDWM Q1			716/1,265 (57%)	0.13 –12 (0.38)	617/716 (86%)	99/716 (14%)
EDWM Q2[4]			719/1,319 (55%)	0.13 – 5.6 (0.32)	628/719 (87%)	91/719 (13%)
EDWM Q3			681/1,145 (59%)	0.13 – 4.8 (0.3)	610/681 (90%)	71/681 (10%)
EDWM Q4			TBD	TBD	TBD	TBD

Notes:
[1] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
[2] For additional information LTM period summary reports are available for review at jbphh-safewaters.org
[3] Lead exceeded the AL of 15 ppb in 26 samples collected from 17 locations during LTM; however, during LTM, further investigation into those exceedances determined lead was associated with a premise plumbing issue and not associated with JP-5 fuel in the System. For additional information LTM period summary reports are available for review at jbphh-safewaters.org
[4] This does not include the 27 September 2024 (initial) lead result collected from 2417D Challenger Loop (Field Sample ID D2-TW-0008333-24092-N). The lead sample result collected from 2417D Challenger Loop on 27 September 2024 was 44.2 ppb. This was an exceedance of the AL of 15 ppb. The exceedance was determined to be associated with premise plumbing and is not associated with the System. This is discussed in more detail in Section 3.1 Analyte Exceedances of this EDWM Quarterly Report.

Detection concentrations during the third quarter of EDWM ranged from 0.13 ppb to 4.8 ppb, with an average detected concentration of 0.3 ppb, which are similar to the reported detections in the first and second quarters of EDWM, as well as LTM. The detection frequency during the third quarter of EDWM (59%) was similar to the trends observed in both the first and second quarters of EDWM, where lead was detected in 57% (716 of 1,265) and 55% (719 of 1,319) of the drinking water samples collected respectively. Detected concentrations for the first and second quarters ranged from 0.13 and 12 ppb, and 0.13 ppb and 5.6 ppb with average detected concentrations of 0.38 ppb and 0.32 ppb. All lead detections during the first, second, and third quarters of EDWM were less than the AL of 15 ppb. Locations of lead samples for the third quarter of EDWM are shown below in Figure 5.

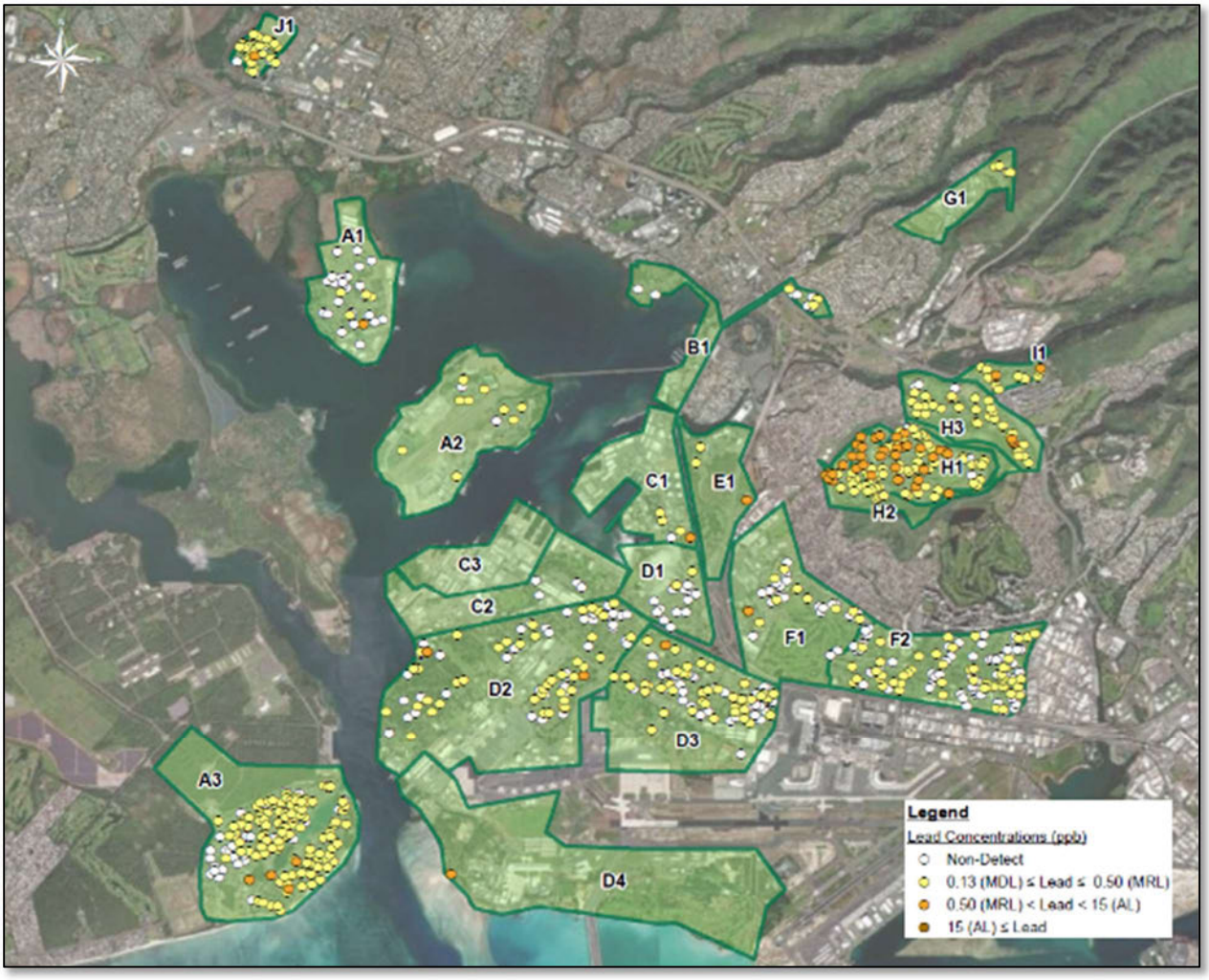


Figure 5. Third Quarter (October – December 2024) EDWM Lead Detection Locations

Lead was not analyzed for in pre-chlorination and post-chlorination samples collected from Waiawa Shaft (source water) in the third quarter of EDWM. Lead, which is regulated under the Safe Drinking Water Act, was not detected in the samples collected in 2023 as part of the JBPHH compliance monitoring program.[15] The detections were observed throughout the System and are not limited to one Zone or general area. Lead in the System is likely not associated with natural background and is likely associated with premise plumbing issues throughout the System, similar to what was observed and documented during LTM.

The Navy administers a robust and layered monitoring approach for lead which includes EDWM, sampling in accordance with the Lead and Copper Rule,[16] and sampling in accordance with the Lead in Priority Area Rule.[17] The System has been and remains in full compliance with State and Federal standards. The Navy will continue to monitor lead concentrations in the System and is currently investigating the cause or source of these detections. This investigation includes: (1) reviewing construction information to determine the piping material used in

[15] See the Consumer Confidence Reports, available at: https://cnrh.cnic.navy.mil/Operations-and-Management/Environmental/Water-Quality-Information/.
[16] https://www.epa.gov/dwreginfo/lead-and-copper-rule
[17] https://www.cnic.navy.mil/Operations-and-Management/Base-Support/Environmental/Water-Quality-Information/Lead-in-Priority-Area-Sampling-Program/

residences and determine if metal piping (e.g., cast iron pipes) with lead solder were used, (2) conducting a spatial analysis to determine if there are spatial patterns to lead concentrations (i.e., is lead detected more frequently or at higher concentrations in certain zones), (3) conducting a temporal analysis to determine if there are patterns in the timing of lead detections (i.e., is lead detected more frequently or at higher concentration during certain weeks or months), and (4) comparing lead to water quality information (e.g., free chlorine concentrations, pH) to determine if there is a correlation.

1,2-Dibromoethane (EDB)

EDB was added to the EDWM analytical list as a potential fuel indicator compound. The presence (i.e., detection) of EDB does not necessarily mean fuel is present in water, and while EDB may be associated with other petroleum compounds utilized in fuels it is not a component of JP-5.[18] Historically, EDB was utilized in leaded gasoline, and as a pesticide prior to being banned in Hawaii in 1984 due to its toxicity. The most common cause for EDB in drinking water is through leaching from contaminated soil into the source water.[19] EDB results for the third quarter of EDWM are summarized below in Table 21.

Table 21. Summary of 1,2-Dibromoethane (EDB) Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	1,2-Dibromoethane (EDB)	ppb	0.05	MCL	n/a	n/a
Schools					n/a	n/a
Child Development Centers					n/a	n/a
Non-Residences					n/a	n/a
Hydrants					1/117 (0.85%)	0.02 – 0.02 (0.02)
Waiawa Shaft – Post Chlorination					0/1	--

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
n/a = Not analyzed.

EDB was detected in 1 out of 117 (0.85%) drinking water samples collected during the third quarter of EDWM. The detection was less than the MCL of 0.05 ppb. EDB was detected at 0.02 ppb in the sample collected from Hydrant 37A (Field Sample ID No. F1-DL-0017724-24275-N) which is less than the MRL of 0.022 ppb and less than the MCL of 0.05 ppb. During the first and second quarters of EDWM, there were also single detections of EDB from the same location, at 0.0085 ppb and 0.02 ppb, respectively. These detections were also below both the MRL and MCL for EDB. All EDB detections have occurred at the same location and EDB has not been detected at other locations in that Zone (i.e., F1) or anywhere else throughout the System. EDB has not been detected in hydrants located upgradient or downgradient of Hydrant 37A and no buildings (i.e., residences, schools, CDCs, and non-residences). This is indicative of a localized, location-specific impact. TPH and other fuel indicator compounds have not been detected at this location in samples where EDB was detected. Because of the multiple detections, the Navy

[18] Sixteen JP-5 fuel product samples were collected from the Red Hill Bulk Fuel Storage Facility in July 2023 and analyzed to determine the chemical makeup of JP-5 fuel that impacted the System. EDB was not detected in any of those samples (see Supplement A of the EDWM Plan).
[19] https://www.epa.gov/archive/epa/aboutepa/epa-acts-ban-edb-pesticide.html

elected to conduct further investigation at this location to determine the cause of the EDB detections and ensure these detections are not associated with fuel-related contamination. Results of the Tier 1 investigation confirmed it was a non-petrogenic source and the results of the Tier 2 analysis will be presented in a separate memorandum. Locations of EDB samples for the third quarter of EDWM are shown below in Figure 6.

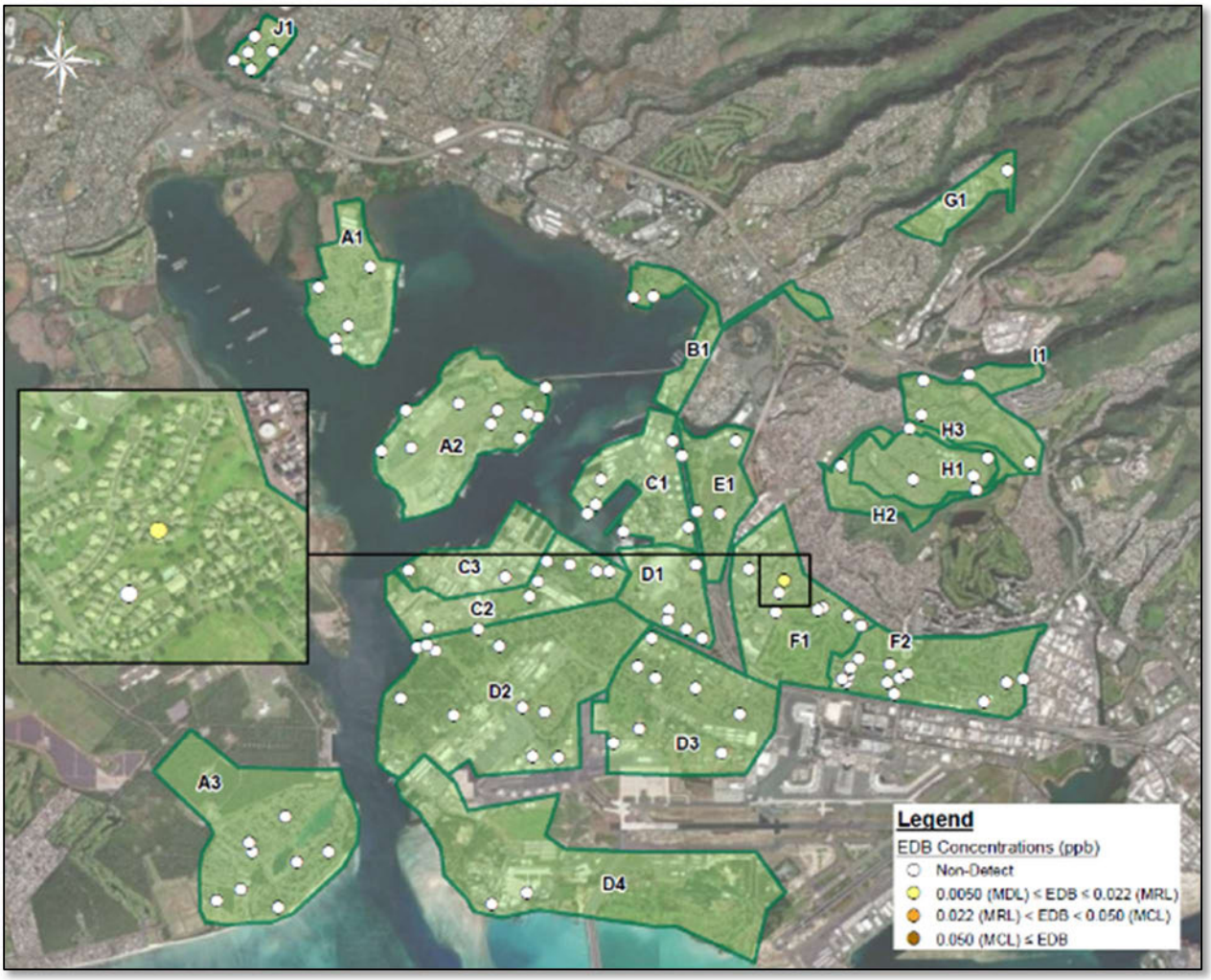


Figure 6. Third Quarter (October – December 2024) EDWM 1,2-Dibromoethane Detection Locations

The detection of EDB is surrounded by non-detects and does not indicate a system-wide impact. TPH were all non-detect at the locations where EDB was detected. EDB was not detected in two pre-chlorination samples collected from Waiawa Shaft (source water) on 21 October 2024 and 07 November 2024 respectively, and was non-detect in the post-chlorination sample collected from Waiawa Shaft (source water) on 07 November 2024.

Naphthalene

Naphthalene was added to the EDWM analytical list as a potential fuel indicator compound. Naphthalene is a component of JP-5.[20] However, the presence (i.e., detection) of Naphthalene does not necessarily mean fuel is present in water. Naphthalene is one of many PAHs which

[20] Sixteen JP-5 fuel product samples were collected from Red Hill tanks in July 2023 and analyzed to determine the chemical makeup of JP-5 fuel that impacted the System. Naphthalene was detected in all of those samples (see Appendix B of the EDWM Plan).

are associated with many human activities and natural processes. Naphthalene, and other PAHs, are formed during the burning of fossil fuels, motor vehicle exhaust, industrial processes, or the burning of organic matter. Naphthalene is natural constituent of coal tar and crude oil, and is used in a variety of different consumer products (i.e. toilet deodorizer and moth repellant). Similar to other PAHs, the most common source of naphthalene in drinking water is from asphalt and coal tar linings in pipes and storage tanks leaching into distribution systems. Naphthalene results for the third quarter of EDWM are summarized below in Table 22.

Table 22. Summary of Naphthalene Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	Naphthalene	ppb	--[2]	--[2]	1/804 (0.12%)	1.3 – 1.3 (1.3)
Schools					0/174 (0%)	--
Child Development Centers					0/126 (0%)	--
Non-Residences					0/41 (0%)	--
Hydrants					0/385 (0%)	--
Waiawa Shaft – Post Chlorination					0/3 (0%)	--

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number of results with detection only.
[2]There is no established MCL.

Naphthalene was detected in 1 out of 1,530 (0.065%) drinking water samples collected during the third quarter of EDWM. Naphthalene was detected at 1.3 ppb in a sample collected from residence 6069A Heron Avenue (Field Sample ID No. A3-TW-0016239-24092-N) which is greater than the MRL of 0.5 ppb. There were no detections for naphthalene in the first quarter of EDWM. During second quarter of EDWM, there was a single detection of naphthalene from Hydrant 79 in Zone D2 at 0.27 ppb. Naphthalene has not been reported wide-spread throughout the System and has been reported in 2 out of 4,858 (0.041%) of samples collected during the first three quarters of EDWM. Locations of naphthalene samples for the third quarter of EDWM are shown below in Figure 7.

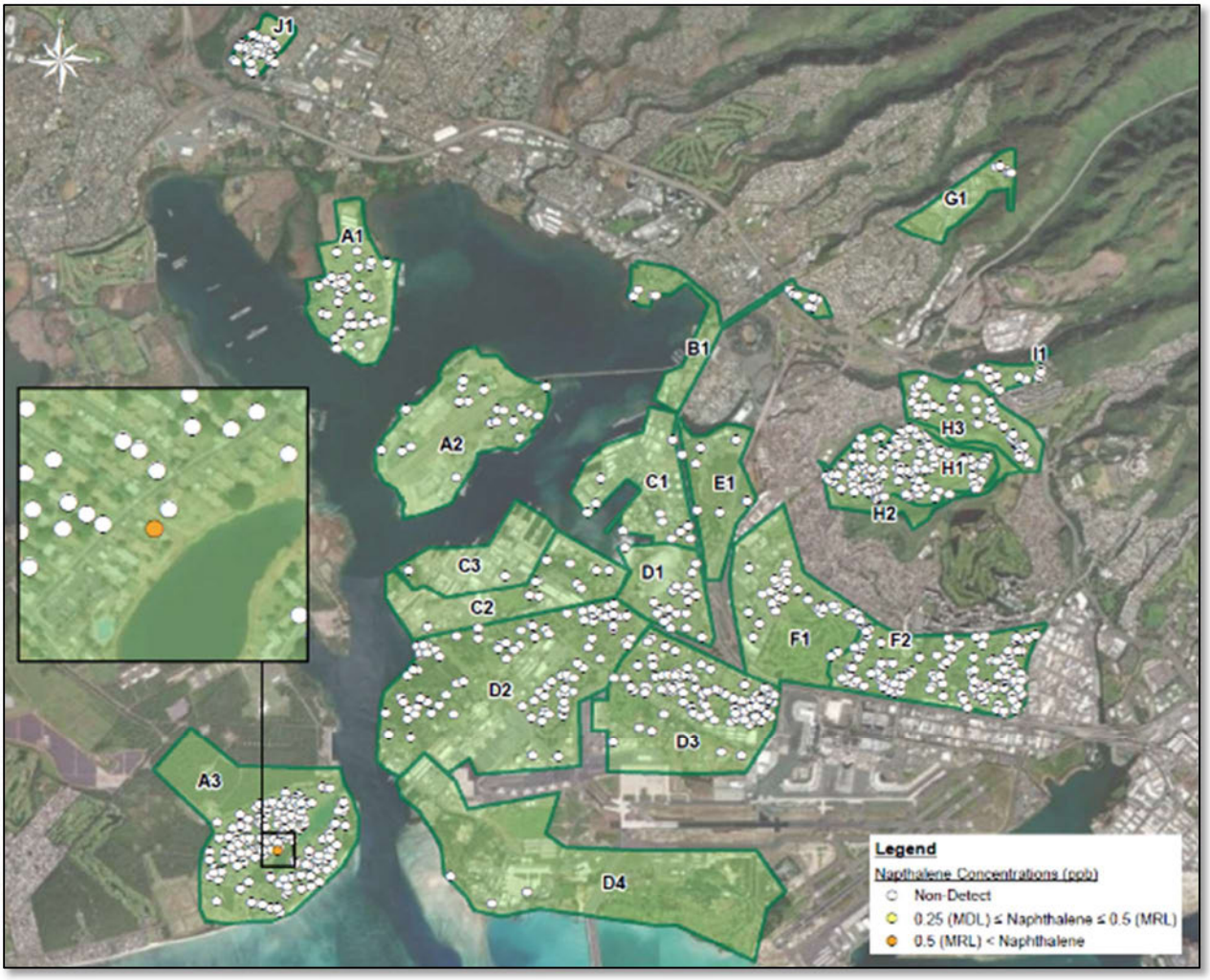


Figure 7. Third Quarter (October – December 2024) EDWM Naphthalene Detection Locations

No other detections of naphthalene have occurred in Zone A3 during EDWM; however, two residences sampled during LTM (i.e., A3-WEHA4837B on 6/17/2022 and A3-105S6619 on 7/20/2022) had detections of naphthalene in Zone A3, which were detected at 1.6 ppb and 1.3 ppb, respectively. Naphthalene was detected in 2 out of 1,050 (0.19%) samples collected from Zone A3 during LTM and 1 out of 661 (0.15%) samples collected from Zone A3 during the first three quarters of EDWM. Naphthalene has not been detected wide-spread throughout Zone A3 and there is not temporal relationship between the detections. TPHs, and other potential fuel indicator compounds, were non-detect. Naphthalene was not detected in three pre-chlorination and post-chlorination samples collected from Waiawa Shaft (source water) on 21 October 2024, 07 November 2024, and 06 December 2024. The Navy conducted further investigation into the naphthalene detection reported during EDWM. The results indicated this result could be related to another PAH, azulene (CASRN: 275-51-4). Azulene is an isomer of naphthalene and, consequently, they have similar mass spectra. Azulene is a common ingredient in household personal care products like makeup or essential oils. The presence of these products could have an impact on the results when analyzing samples at low levels. The Navy elected to conduct a Tier 2 analysis at this location to confirm the detection of naphthalene is not related to JP-5 or other fuels. The results of the Tier 2 analyses will be documented in a separate technical memorandum.

Phenanthrene

Phenanthrene was added to the EDWM analytical list as a potential fuel indicator compound. Phenanthrene is a component of JP-5.[21] However, the presence (i.e., detection) of phenanthrene does not necessarily mean fuel is present in water. Phenanthrene is one of many PAHs which are associated with many human activities and natural processes. Phenanthrene, and other PAHs, are formed during the burning of fossil fuels, motor vehicle exhaust, industrial processes, or the burning of organic matter. Phenanthrene is natural constituent of coal tar and crude oil. Similar to other PAHs, the most common source of phenanthrene in drinking water is adsorption from asphalt and coal tar linings in pipes and storage takes within the distribution system. Phenanthrene results for the third quarter of EDWM are summarized below in Table 23.

Table 23. Summary of Phenanthrene Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	Phenanthrene	ppb	--[2]	--[2]	1/804 (0.12%)	0.29 – 0.29 (0.29)
Schools					0/174 (0%)	--
Child Development Centers					0/126 (0%)	--
Non-Residences					0/41 (0%)	--
Hydrants					0/385 (0%)	--
Waiawa Shaft – Post Chlorination					0/3 (0%)	--

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number of results with detection only.
[2]There is no established MCL.

Phenanthrene was detected in 1 out of 1,530 (0.065%) drinking water samples collected during the third quarter of EDWM. Phenanthrene was detected at 0.29 ppb in a WQAT sample collected from residence 306 Lehua Avenue (Field Sample ID No. A1-TW-0001516-24092-N-WQI) which is greater than the MDL of 0.25 ppb, but less than the MRL of 0.5 ppb. During second quarter of EDWM, there were two detections of phenanthrene from a school in Zone E1 and a residence in Zone D2 with results of 0.27 and 0.41 ppb, respectively. The school in Zone E1 was sampled three times in Q3 and phenanthrene was not detected. The residence in Zone D2 was surrounded by locations where Phenanthrene was not detected. There were no detections for phenanthrene in the first quarter of EDWM. The results between each quarter of EDWM have been similar and phenanthrene has not been observed throughout the System. Detections of phenanthrene are surrounded by locations that were non-detect. TPH and potential fuel indicator compounds were non-detect at locations where phenanthrene was reported. Based on this information, these detections are not JP-5 or other fuel-related and no further investigation was warranted. Locations of phenanthrene samples for the third quarter of EDWM are shown below in Figure 8.

[21] Sixteen JP-5 fuel product samples were collected from Red Hill Bulk Fuels Storage Facility in July 2023 and analyzed to determine the chemical makeup of JP-5 fuel that impacted the System. Phenanthrene was detected in all of those samples (see Appendix B of the EDWM Plan).

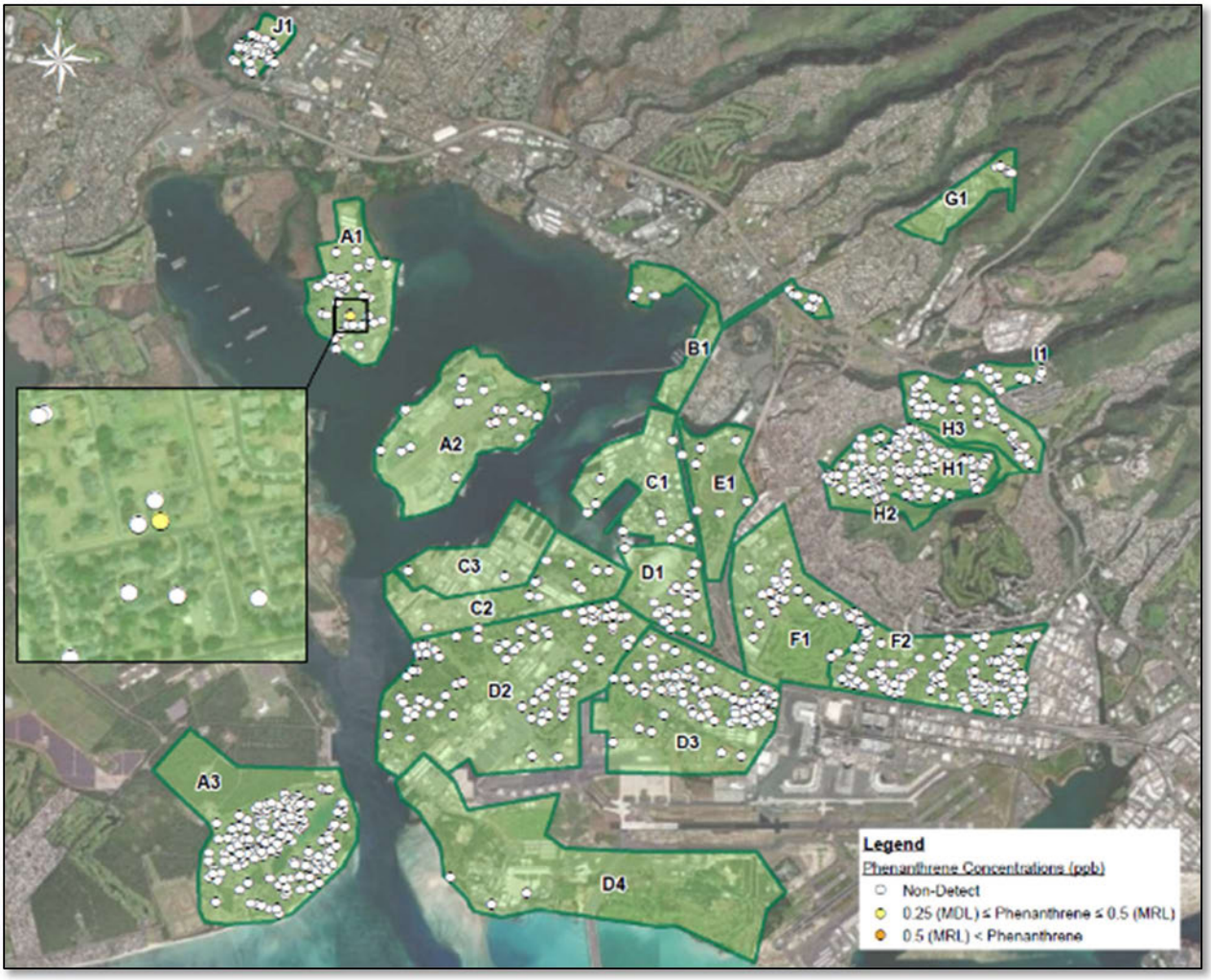


Figure 8. Third Quarter (October – December 2024) EDWM Phenanthrene Detection Locations

The detections are observed throughout the System and are not co-located to one Zone or general area. The detection of phenanthrene is surrounded by non-detects and does not indicate there is a system-wide impact. Phenanthrene was not detected in three pre-chlorination and post-chlorination samples collected from Waiawa Shaft (source water) on 21 October 2024, 07 November 2024, and 06 December 2024 respectively.

Benzo(g,h,i)perylene

Benzo(g,h,i)perylene was added to the EDWM analytical list as a potential fuel indicator compound. Benzo(g,h,i)perylene is not a component of JP-5 but may be associated with other fuels.[22] However, the presence (i.e., detection) of benzo(g,h,i)perylene does not necessarily mean fuel is present in water. Benzo(g,h,i)perylene is one of many PAHs which are associated with many human activities and natural processes. Benzo(g,h,i)perylene, and other PAHs, are formed during the burning of fossil fuels, motor vehicle exhaust, industrial processes, or the burning of organic matter. Benzo(g,h,i)perylene is natural constituent of coal tar and crude oil. Similar to other PAHs, the most common source of benzo(g,h,i)perylene in drinking water is

[22] Sixteen JP-5 fuel product samples were collected from Red Hill tanks in July 2023 and analyzed to determine the chemical makeup of JP-5 fuel that impacted the System. Benzo(g,h,i)perylene was not detected in any of those samples (see Appendix B of the EDWM Plan)

from asphalt and coal tar linings in pipes and storage tanks leaching into the distribution system. Benzo(g,h,i)perylene results for the third quarter of EDWM are summarized below in Table 24.

Table 24. Summary of Benzo(g,h,i)perylene Results by Location Type (October – December 2024) of EDWM

Sample Location Type	Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
					No. of Detects out of Samples	Minimum – Maximum (Average)[1]
Residences	Benzo(g,h,i)perylene	ppb	--	--	1/804 (0.12%)	0.4 – 0.4(0.4)
Schools					0/174 (0%)	--
Child Development Centers					0/126 (0%)	--
Non-Residences					0/41 (0%)	--
Hydrants					0/385 (0%)	--
Waiawa Shaft – Post Chlorination					0/3 (0%)	--

Notes:
[1]These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number of results with detection only.

Benzo(g,h,i)perylene was detected in 1 of the 1,530 (0.065%) drinking water samples collected during the third quarter of EDWM. Benzo(g,h,i)perylene was detected at 0.40 ppb in a sample collected from residence 123 Curtis Court (Field Sample ID No. A1-TW-0001270-24092-N) which is greater than the MDL of 0.25 ppb, but less than the MRL of 0.5 ppb. There were no detections for benzo(g,h,i)perylene in either the first or second quarters of EDWM. Locations of benzo(g,h,i)perylene samples for the third quarter of EDWM are shown below in Figure 9.

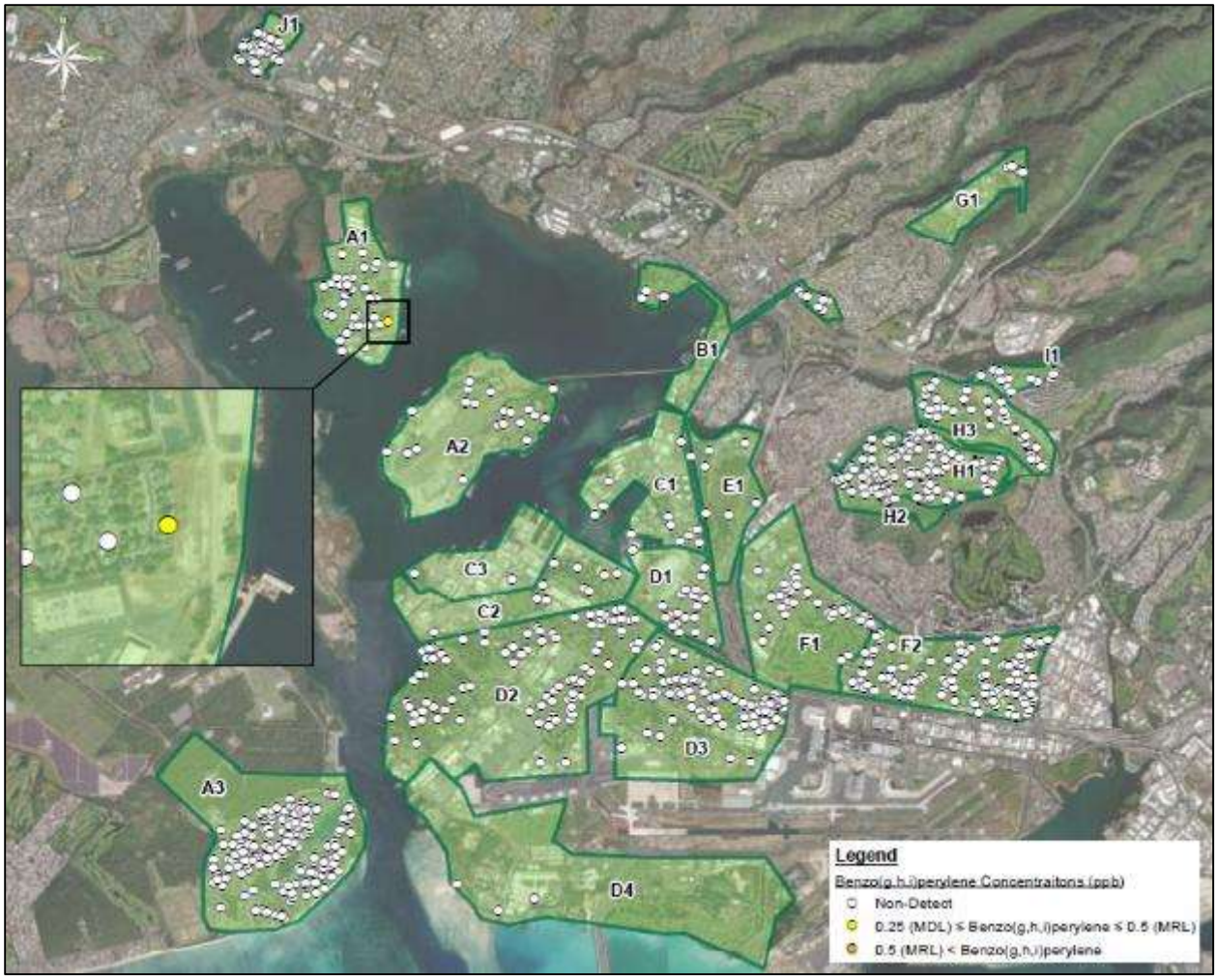


Figure 9. Third Quarter (October – December 2024) EDWM Benzo(g,h,i)perylene Detection Locations

The detections are observed throughout the System and are not co-located to one Zone or general area. Detections of benzo(g,h,i)perylene are surrounded by non-detects and do not indicate a system-wide impact. Benzo(g,h,i)perylene was not detected in three pre-chlorination and post-chlorination samples collected from Waiawa Shaft (source water) on 21 October 2024, 07 November 2024, and 06 December 2024 respectively.

Section 4. Quality Assurance/Quality Control Sampling

This section summarizes the results of quality assurance/quality control (QA/QC) samples collected by the Navy and EPA to assess the results of drinking water samples. These samples are important for ensuring the data reported by the laboratory is accurate and can be used to evaluate the overall protectiveness of drinking water supplied by the System.

4.1 Monthly Performance Evaluation Monitoring

In accordance with the EDWM Plan, monthly performance evaluation (PE) samples were collected at a minimum of two samples per month. The PE samples are samples that were spiked with a known concentration of JP-5 (i.e., 80 ppb and 266 ppb) and submitted to the laboratory for analysis. These are "blind" samples (i.e., the laboratory does not know that they were spiked with JP-5) and are analyzed as normal samples. The results of the monthly PE samples collected during the third quarter (i.e., October – December 2024) of EDWM are summarized below in Table 25.

Table 25. Summary of Monthly PE Monitoring Sample Results (October – December 2024)

Sample ID	Sample Date	Spike Concentration (ppb)	Laboratory Result (ppb)	Percent Difference (%)
I1-TW-0016032-24122-N-1-R5	10/9/2024	266	157	41%
I1-TW-0016032-24122-N-2-R5	10/9/2024	80	56 J	30%
I1-TW-0016032-24122-N-1-R6	11/13/2024	80	88.9 J	11%
I1-TW-0016032-24122-N-2-R6	11/13/2024	266	315 J	18%
I1-TW-0016032-24122-N-1-R7	12/11/2024	80	71.3	11%
I1-TW-0016032-24122-N-2-R7	12/11/2024	266	263	1%

The PE sample results indicate the lab is getting good recoveries and the EDWM analytical results are of good quality. The Navy will continue to collect monthly PE samples as part of EDWM.

4.2 Matrix Spike

In accordance with the EDWM Plan, matrix spike (MS) samples were analyzed at an increased frequency compared to LTM. A MS sample is obtained by the sampling crew collecting additional drinking water samples in the field and submitting it to the lab an additional to the other samples collected. The lab then spikes the MS sample with a known quantity of TPH and analyzes it along with the other samples in the batch. The lab then compares the results of the MS sample to the known quantity they added to the sample. MS samples were spiked with JP-5 near the MRL of 80 ppb and analyzed for TPHs using EPA Method 8015. A total of 68 MS samples were collected and analyzed between 02 October 2024 and 31 December 2024 and analyzed for TPHs. The MS results are presented in Appendix D. Sixty-five out of 68 (96%) MS results were within the acceptable criteria of +/- 30% recovery indicating the lab is getting acceptable recoveries and that the sample data is reliable.[23]

4.3 EPA Co-Sampling

The purpose of the co-sampling is to serve as an independent QA/QC measure for assessing the Navy's drinking water results. The co-sampling (referred to as split sampling in the EDWM

[23] The analytical lab noted potential spiking issues with three MS samples: OP26671-MS, OP26670-MS, and OP26770-MS. These results do not impact the reliability of the data because over 95% of the MS samples collected were within acceptable recoveries.

Plan) involves the Navy and EPA collecting a drinking water sample at the same time, from the same location, but sending their respective samples to different laboratories for analysis. The results are compared to determine if additional investigation or action is warranted. The Navy did not conduct a co-sampling event in conjunction with the EPA in the third quarter of EDWM.

4.4 DOH Split Sampling

In September 2024, DOH began collecting and analyzing co-samples for VOCs, SVOCs, TTHMs, and PFAS chemicals. The DOH split sampling was conducted independent of EDWM and did not include all analytes outlined in the EDWM Plan. Results of the split sampling could serve as an independent QA/QC measure for assessing the Navy's drinking water results. The co-sampling (referred to as split sampling in the EDWM Plan) involves the Navy and DOH collecting a drinking water sample at the same time, from the same location, but sending their respective samples to different laboratories (i.e., the Navy's contracted laboratory and the laboratory used by DOH) for analysis. The results are compared to determine if additional investigation or action is warranted. DOH co-samples were not analyzed for TPH. DOH's results have not been provided; therefore, a comparison could not be conducted at this time. Once DOH's results are available, the Navy will compare the results to ensure the results are consistent between the two labs or determine if additional investigation/action is warranted. No JP-5/other fuel-related analytes were detected in the five samples were collected on 01 October 2024. The Navy's results of the co-sampling (Sample IDs A3-DL-0017762-24274-N, D3-DL-0023430-24274-N, H3-DL-0018382-24274-3-A, H3-DL-0018382-24274-A, I1-DL-0000639-24274-A) are available on https://jbphh-safewaters.org/.

4.5 Non-Source Water Shaft Samples

In accordance with the EDWM plan, the NAH Shaft and RH Shaft are sampled quarterly for general water quality parameters; during the third quarter of EDWM, the Navy voluntarily collected drinking water samples from the NAH shaft and analyzed for TPH, select fuel indicator compounds and metals. The RH Shaft was not analyzed for TPH and fuel indicator compounds. **At the time of this report, the NAH and RH Shafts remain offline and do not provide drinking water to the System.**

TPH and the fuel indicator compounds were non-detect in the NAH Shaft. Copper and lead were the only chemicals detected in the NAH Shaft, and all results were below the ALs of 1,300 ppb and 15 ppb, respectively. None of the EDWM chemicals analyzed were detected in the RH Shaft. A summary of the results of the NAH Shaft is summarized Table 26 below.

Table 26. Summary of Navy Aiea-Halawa Shaft (Pre-Chlorination) Results (October – December 2024)

Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
				No. of Detects out of Samples	Minimum – Maximum (Average)
Contaminants of Concern					
Benzene	ppb	5	MCL	0/1	--
Ethylbenzene	ppb	700	MCL	0/1	--
Toluene	ppb	1,000	MCL	0/1	--
Xylenes (Total)	ppb	10,000	MCL	0/1	--
1-Methylnaphthalene	ppb	--[1]	--	0/1	--
2-Methylnaphthalene	ppb	--[1]	--	0/1	--
Naphthalene	ppb	--[1]	--	0/1	--
Total Petroleum	ppb	--[1]	--	0/1	--

Contaminant	Units	Screening Level	Basis for Screening Level	EDWM Summary – Third Quarter	
				No. of Detects out of Samples	Minimum – Maximum (Average)
Metals					
Copper	ppb	1,300	AL	1/1	6 – 6 (6)
Lead	ppb	15	AL	1/1	0.58 – 0.58 (0.58)

Notes:
[1] There is no established MCL.

Section 5. Water Quality Action Team

In addition to the EDWM Plan, the Navy established the WQAT (previously referred to as the Rapid Response Team) to address consumer water quality concerns.

The WQAT works independently of the EDWM to collect samples at locations with consumer concerns. The WQAT is one piece of the overall effort taken by the Navy to continue to demonstrate that the System is no longer impacted by the November 2021 Red Hill release and that water provided by the System is safe for consumption. Although the WQAT is a separate program, independent of EDWM, and is not a requirement under the EDWM Plan, the results of the WQAT drinking water samples are included in this report to support the evaluation of drinking water in the System.

System users are encouraged to contact the WQAT Call Center and report any water quality and/or health-related concerns associated with their tap water. The WQAT will then work with the consumer to launch a drinking water investigation and determine if JP-5/other fuel-related analytes are impacting the System; as well as identify any water quality concerns with the premise and communicate the results to the resident/occupant. This section summarizes the results of the WQAT samples collected by the Navy to address residents' water quality concerns.

5.1 Summary of WQAT Concerns

During the third quarter of EDWM, a total of 13 concerns were reported to the WQAT. Water quality concerns were reported by 12 residences and 1 non-residence. The total calls per month varied, with five concerns reported in October, two reported in November, and six reported in December. Additionally, water quality concerns were reported in 9 Zones on the System. Figure 10 below summarizes the total number of calls received between July 2024 and September 2024. Additional information is also available on the https://jbphh-safewaters.org under the "Concern Log Archive".

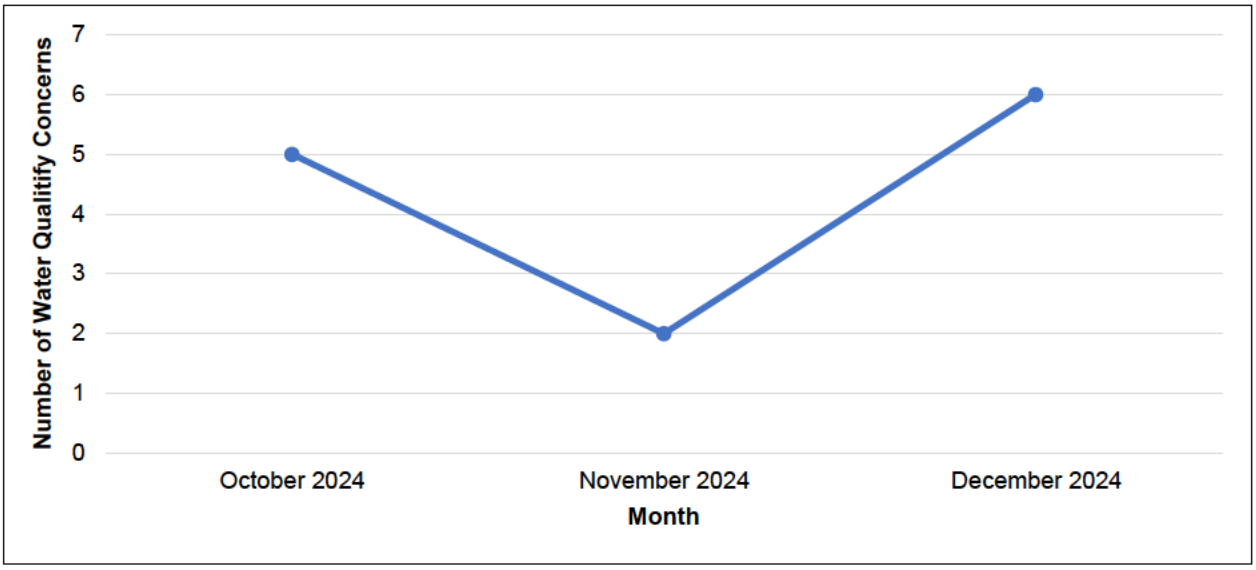


Figure 10. Total Water Quality Concerns (October – December 2024)

Table 27 below summarizes the number of water quality concerns, by Zone, between October 2024 and December 2024.

Table 27. Summary of WQAT Concerns (October – December 2024)

Zone[1]	Number of Investigations (October 2024)	Number of Investigations (November 2024)	Number of Investigations (December 2024)	Total Investigations
A1	3	0	0	3
A3	1	1	3	5
D2	1	0	1	2
D3	0	0	1	1
F2	0	1	0	1
H1	0	0	1	1
Total	**5**	**2**	**6**	**13**

Notes:
[1] Zones not listed in this table did not have any concerns that were investigated by the WQAT during the third quarter (i.e., October – December 2024) of EDWM.

In October 2024, five residences from three Zones (i.e., A1, A3, and D2) reported water quality concerns to the WQAT. In November 2024, two residences from two Zones (i.e., A3 and F2) reported water quality concerns to the WQAT. In December 2024, five residences and one non-residence from four Zones (i.e., A3, D2, D3, and H1) reported water quality concerns to the WQAT. In the third quarter, December experienced the highest volume of concerns, followed closely by October, and then November, which experienced the lowest volume of concerns. Locations where the WQAT completed WQAT investigations (e.g., inspections, sampling) during the third quarter of EDWM are shown in Figures 11 through 13.

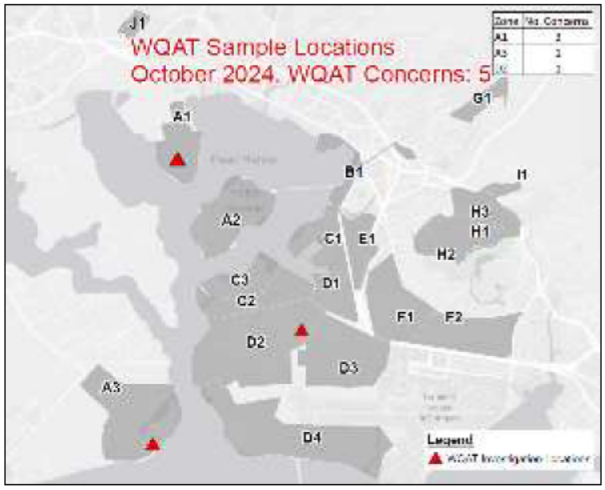


Figure 11. October 2024 WQAT Sample Locations

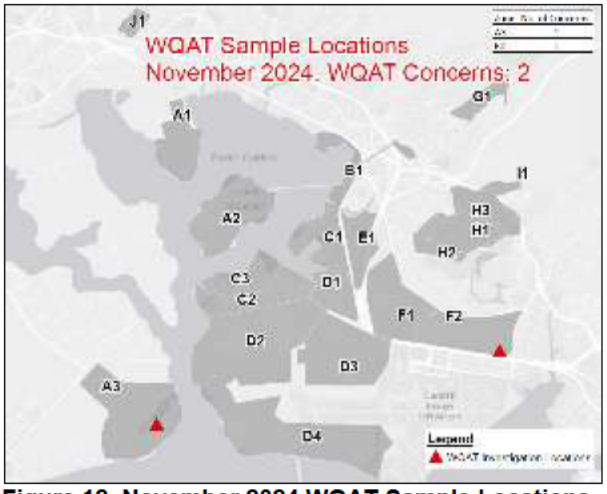


Figure 12. November 2024 WQAT Sample Locations

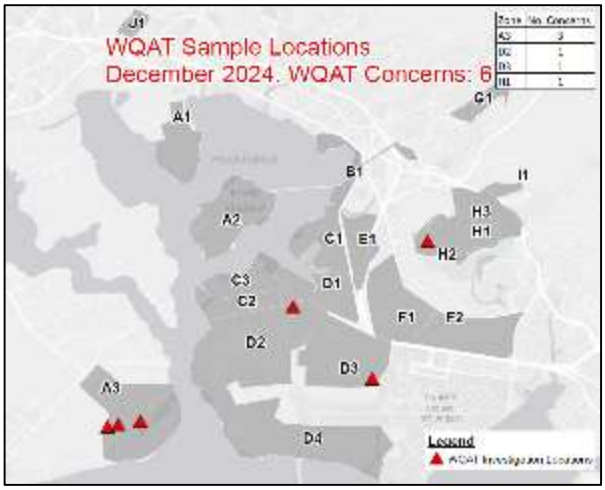


Figure 13. December 2024 WQAT Sample Locations

Other factors, such as public events and media coverage, also impact the number of concerns the WQAT call center receives. It is important to acknowledge that ongoing events, such as the finalization of the Administrative Consent Order (ACO), establishment of the Community Representative Initiative (CRI), door-to-door surveys conducted by EPA and Agency for Toxic Substances and Disease Registry (ATSDR), the defueling of the Red Hill Bulk Storage Facility, a lawsuit brought against the US government, and media coverage can raise public awareness and amplify the concerns regarding water quality and safety of their drinking water. The Navy takes every call and water quality concern received by the WQAT call center seriously and is committed to ensuring drinking water provided by the System is no longer impacted by JP-5 fuel.

5.2 Summary of Water Quality Action Team Investigations

WQAT investigations (e.g., home inspection, drinking water sampling) were performed at 13 of the 13 locations where a water quality concern was reported to the WQAT. In some cases, the WQAT sample was performed in a different quarter of EDWM due to scheduling conflicts with the resident. For example, a resident may have called into the WQAT in December 2024 (Q3) to report an issue, but the resident was not available to have their residence sampled until January 2025 (Q4). In that instance, the results of the WQAT investigation (e.g., home inspection, drinking water sampling) will be reported in the fourth quarterly report. This section summarizes the results of WQAT investigations performed during the third quarter of EDWM (i.e., results of investigations and sampling performed between October 2024 and December 2024).

The WQAT collected fifteen drinking water samples during the third quarter of EDWM. All drinking water samples were collected and analyzed in accordance with the EDWM Plan. Additionally, the WQAT:

- Conducts a site inspection for all locations that call the WQAT and request to be sampled;
- Measures water quality parameters, including pH, conductivity, turbidity, free chlorine, and temperature, in the field (these measurements are collected from cold and hot water);
- Investigates tap water at each location to determine if a sheen, odor, or other visible indicators of fuel are present;
- Conducts rapid TPH screening and collects a drinking water sample to be collected in accordance with the WQAT protocols and sends the sample to the lab for analysis;

- Offers alternative water supply to the concerned resident; and
- Follows up with the resident/facility regarding the results of the site inspection and sample results.

All observations, and results of the WQAT investigation, are documented in a technical memorandum (see Appendix E). This information is important for evaluating overall water quality in the System and ensuring the System is not impacted by JP-5 or other fuel-related analytes. A summary of the WQAT's investigation conducted during the third quarter of EDWM is provided below in Table 28.

Table 28. Summary of WQAT Observations and TPH Results (October – December 2024)

Zone	Sample ID	Fuel Sheen Observed by WQAT?	Fuel Odor Observed by WQAT?	Petroleum Impacts Observed by WQAT?	TPH Result (ppb)
A1	A1-TW-0001516-24092-N-WQI[1]	No	No	No	Non-Detect
A1	A1-TW-0001519-24092-N-WQI	No	No	No	Non-Detect
A1	A1-TW-0001530-24092-N-WQI[1]	No	No	No	Non-Detect
A3	A3-TW-0016289-24092-N-WQI	No	No	No	Non-Detect
A3	A3-TW-0016384-24092-N-WQI[2]	No	No	No	Non-Detect
A3	A3-TW-0016559-24092-N-WQI	No	No	No	Non-Detect
A3	A3-TW-0016810-24092-N-1-WQI	No	No	No	Non-Detect
A3	A3-TW-0017397-24092-N-WQI	No	No	No	Non-Detect
D2	D2-TW-0007691-24092-N-WQI	No	No	No	Non-Detect
D2	D2-TW-0008266-24092-N-WQI	No	No	No	Non-Detect
D3	D3-TW-0015225-24092-N-WQI	No	No	No	Non-Detect
F2	F2-TW-0009314-24092-N-WQI	No	No	No	Non-Detect
H1	H1-TW-0013427-24092-A-WQI	No	No	No	Non-Detect

Notes:
[1] A resample was collected at these locations. TPH was non-detect in these resamples. Fuel sheen, odor, and petroleum-impacts were not observed at either location.
[2] This sample is associated with a call reported during Q2.

Total TPHs have not been detected in any of the drinking water samples collected by the WQAT during the third quarter of EDWM. Additionally, the WQAT has not observed any fuel-related sheen, odor, or other JP-5 or other fuel-related analytes impacts to drinking water from the fifteen samples collected between October and December 2024.

Section 6. Conclusions

The results of the third quarter of EDWM demonstrate that JP-5/other fuel-related analytes are not impacting the System. The water continues to meet all state and federal standards. This is supported by the following:

- TPHs were not detected in the source water (i.e., Waiawa Shaft) in October, November, or December 2024.
- TPHs were detected in less than 1% (i.e., 4 out of 1,530) of drinking water samples collected from 20 Zones throughout the System.
  - TPHs were detected in one hydrant in Zone J1 and one hydrant in Zone D3. The hydrant in Zone J1 had a detection in both the normal and field duplicate samples. Initial assessments of these detections indicate that the detections are not related to JP-5 or other fuels. The Navy voluntarily initiated a Tier 2 investigation at these hydrants and the Tier 2 analysis will be documented in a separate technical memorandum.
  - TPH was detected in one residence in Zones A3. Initial assessment of the sample indicated that the detection is not JP-5 and is associated with heavy lubricant patterns. This residence was re-sampled, with result of non-detect for TPH-D and TPH-O. The Navy voluntarily initiated a Tier 2 investigation at this residence and the Tier 2 analysis will be documented in a separate technical memorandum.
- Nine additional analytes were detected in drinking water samples collected during the third quarter of EDWM: copper, lead, mercury, benzo(a)pyrene, naphthalene, phenanthrene, benzo(g,h,i)perylene, 1,2-dibromoethane (EDB), and total trihalomethanes (TTHM). Results for these chemicals were compared to MCL/ALs. All results were below their respective MCL/AL. Three of the analytes: copper, mercury and TTHMs are related to general water quality and were not evaluated further as these analytes are not associated with JP-5/other fuels. Additionally, during LTM copper was found to be related to premise plumbing, with an expectation of a high frequency of detections. TTHM, is a byproduct of drinking water disinfection, and is not a JP-5/other fuel-related analyte. Six of the analytes (i.e., benzo[a]pyrene, EDB, lead, naphthalene, phenanthrene, and benzo(g,h,i)perylene) were evaluated in further detail because they may be associated with fuel. The results are summarized below.
  - Benzo(a)pyrene was detected in 1.7% (i.e., 26 of 1,530) drinking water samples collected during the third quarter of EDWM. All detections were less than the MCL of 0.2 ppb. Detected concentrations ranged from 0.01 to 0.035 ppb with an average detected concentration of 0.019 ppb. The detections were observed throughout the System and were not limited to one Zone or general area. Detections of benzo(a)pyrene are surrounded by non-detects and do not indicate a system-wide impact or source.
  - Lead was detected in 59% (i.e., 681 of 1,144) drinking water samples collected during the third quarter of EDWM. All detections were less than the AL of 15 ppb. Detected concentrations ranged from 0.13 to 4.8 ppb, with an average detected concentration of 0.3 ppb. The detections were observed throughout the System and were not limited to one Zone or general area. The lead detections are likely associated with premise plumbing.
  - EDB was detected in 0.85% (i.e.,1 of the 117) drinking water samples collected during the third quarter of EDWM. The detected concentration was 0.02 ppb which

is less than the MCL of 0.05 ppb. This detection occurred at Hydrant 37A where in the first and second quarters of EDWM, there were also single detections of EDB from the same location below the MRL and MCL. TPH, and other fuel indicator compounds, were not detected at this location. The result was reported at a concentration greater than the MDL, but less than the MRL. Detections of EDB were surrounded by non-detects and do not indicate there is a system-wide impact or source. The Navy performed a Tier 1 evaluation and found that the detection is not fuel related. This detection is likely associated with a non-petrogenic localized issue and is not present in the distribution system. The Navy voluntarily initiated a Tier 2 analysis at this location and the results of the Tier 2 will be documented in a separate memorandum.

- Naphthalene was detected in 0.065% (i.e.,1 of the 1,530) drinking water samples collected during the third quarter of EDWM. The detected concentration was 1.3 ppb which is greater than the MRL of 0.5 ppb. There is no MCL for Naphthalene. TPH, and other fuel indicator compounds, were not detected at this location. The detection of naphthalene was surrounded by non-detects and does not indicate there is a system-wide impact or source. At the time of developing this report, the Navy is working to contact the resident to perform an inspection and conduct resampling activities. The Navy performed a Tier 1 evaluation and found that the detection is not fuel related. The Navy voluntarily initiated a Tier 2 analysis at this location and the results of the Tier 2 will be documented in a separate memorandum.
- Phenanthrene was detected in 0.065% (i.e.,1 of the 1,530) drinking water samples collected during the third quarter of EDWM. The detected concentration was 0.29 ppb which is greater than the MDL of 0.25 ppb, but less than the MRL of 0.5 ppb. There is no MCL for phenanthrene. TPH, and other fuel indicator compounds, were not detected at this location. The detection of phenanthrene was surrounded by non-detects and does not indicate there is a system-wide impact or source.
- Benzo(g,h,i)perylene was detected in 0.065% (i.e.,1 of the 1,530) drinking water samples collected during the third quarter of EDWM. The detected concentration was 0.4 ppb which is greater than the MDL of 0.25, but less than the MRL of 0.5 ppb. There is no MCL for benzo(g,h,i)perylene. TPH, and other fuel indicator compounds, were not detected at this location. The detection of naphthalene was surrounded by non-detects and do not indicate there is a system-wide impact or source.

After the Navy voluntarily initiated EDWM in April 2024, the EDWM Plan has gone through various revisions. The EDWM Plan is a “living” document which means it will be updated and amended based on new information or field conditions. In June 2024, the Navy revised the EDWM analyte list (Table 2-1 of the EDWM Plan) to include 16 additional fuel indicator compounds. As a result, samples collected before June 2024 were not analyzed for these chemicals. Additionally, in the final version of the EDWM plan, the Navy, with input from EPA, revised the four COAs in Section 5 of the EDWM Plan to ensure proper investigation and action was taken based on EDWM results. For example, COA 3 was revised to include additional investigation for all locations where JP-5/other fuel-related indicator compounds were detected above the MRL. These revisions do not impact the conclusions of this report.

The results of the third quarter of EDWM demonstrate that JP-5/other fuel-related analytes are not impacting the System. Additional investigations, triggered by the conditions established in

Section 5 of the EDWM Plan, will be documented in tech memos (e.g., initial assessments, Tier 1 analysis, etc.). The Navy has voluntarily established a program for conducting a forensics analysis (called Tier 2) at locations where TPH or JP-5/other fuel-related compounds are detected and the results of the initial assessment and Tier 1 analysis were inconclusive. This Tier 2 analysis is not required under the EDWM Plan, but is another tool the Navy uses, where appropriate, to ensure that drinking water in the System continues to meet all State and Federal standards and is safe for consumption.

Table 5. Contaminants Detected in Drinking Water Samples Collected from Residences

Contaminant[1]	Typical Source of Contaminant	Units[2]	Screening Level[3]	Basis for Screening Level	EDWM Summary – First Quarter Apr – Jun 2024		EDWM Summary – Second Quarter Jul – Sept 2024		EDWM Summary – Third Quarter Oct – Dec 2024		EDWM Summary – Fourth Quarter Jan – Mar 2025	
					No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]
Contaminants of Concern												
Benzene	Discharge from factories; Leaching from gas storage tanks and landfills	ppb	5	MCL	0/926	--	0/968	--	0/804	--	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Ethylbenzene	Discharge from petroleum refineries	ppb	700	MCL	0/926	--	0/968	--	0/804	--		
Toluene	Discharge from petroleum factories	ppb	1,000	MCL	0/926	--	1/968	0.57 – 0.57 (0.57)	0/804	--		
Xylenes (Total)	Discharge from petroleum factories; Discharge from chemical factories	ppb	10,000	MCL	0/926	--	0/968	--	0/804	--		
1-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/926	--	0/968	--	0/804	--		
2-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/926	--	0/968	--	0/804	--		
Naphthalene	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant	ppb	--[8]	--[8]	0/926	--	0/968	--	1/804	1.3 – 1.3 (1.3)		
Total Petroleum Hydrocarbons (Total)	TPH is petroleum and can contaminate drinking water through spills and other releases into the environment	ppb	--[5]	--[5]	1/926	62 – 62 (62)	4/977	73 – 390 (182)	1/804	53 – 53 (53)		
Total Organic Carbon (TOC)	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources	ppb	4,000[6]	ISP	6/926	200 – 500 (308)	2/968	240 – 290 (260)	4/804	200 – 430 (265)		
Free Chlorine[7]	Water additive used to control microbes	ppb	4,000	ISP	1,263/1,268	10 – 1,050 (497)	1,864/1,868	10 – 1,700 (440)	1,112/1,114	20 – 1,720 (641)		
Metals												
Copper	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	1,300	AL	924/926	0.68 – 244 (25)	962/968	0.81 – 208 (23)	801/804	0.63 – 140 (21)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Lead	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	15	AL	531/926	0.13 – 8.2 (0.36)	524/968	0.13 – 44 (0.41)	498/804	0.13 – 4.4 (0.29)		
Mercury	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland	ppb	2	MCL	1/926	0.028 – 0.028 (0.028)	1/968	0.11 – 0.11 (0.11)	2/804	0.025 – 0.095 (0.060)		
Volatile Organic Compounds (VOCs)												
Total trihalomethanes (sum of chloroform, bromoform, bromodichloromethane, and di-bromochloromethane)	By-product of drinking water disinfection	ppb	80	MCL	316/926	0.25 – 14 (1.2)	328/968	0.25 – 25 (1.3)	438/804	0.25 – 17.1 (1.2)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Semi-Volatile Organic Compounds (SVOCs)												
Benzo(a)pyrene	Leaching from linings of water storage tanks and distribution lines	ppb	0.2	MCL	61/926	0.011 – 0.034 (0.017)	56/968	0.011 – 0.032 (0.017)	12/804	0.010 – 0.034 (0.18)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Benzo(g,h,i)perylene	Benzo(g,h,i)perylene is found in heavy oils, coal tar, and is used in the preservation of wood as well as in the manufacture of dyes, plastics and pesticides	ppb	--[8]	--[8]	--[9]	--	0/978	--	1/804	0.40 – 0.40 (0.4)		
Phenanthrene	Phenanthrene is found in heavy oils, coal tar, and is used in the preservation of wood as well as in the manufacture of dyes, plastics and pesticides	ppb	--[8]	--[8]	--[9]	--	1/605	0.41 – 0.41 (0.41)	1/804	0.29 – 0.29 (0.29)		

Notes:

[1] This table focuses on JP-5/other fuel-related analytes detected in drinking water samples collected during this period from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT. Samples were also tested for water quality parameters (see Table A-1 in Appendix A) which provide additional information for the evaluation of overall water quality in the System. This information is available for review on the Safe Waters Webpage (https://jbphh-safewaters.org/).

[2] All results are reported in parts per billion (ppb). This refers to the amount (or concentration) of a contaminant in the water.

[3] Results of the drinking water samples will be compared to EPA's Safe Drinking Water Act (SDWA) maximum contaminant level (MCLs), SDWA action levels (ALs), and DOH incident specific parameters (ISPs) - where indicated.

[4] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.

[5] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.

[6] Total Organic Carbon (TOC) test results report any constituent containing carbon, many of which are naturally occurring and some of which may be man-made.

[7] Chlorine is used as an additive to drinking water for disinfection purposes.

[8] No established MCL from EPA.

[9] This analyte was added to the EDWM Plan in August 2024; therefore, this analyte was not analyzed for during Q1 of EDWM and or during July 2024 (first month of Q2 of EDWM). Cells highlighted in green indicate the water sample results were below their respective MCL, AL, or ISP.

Acronyms and explanation of terms used in this table are presented in Appendix A.

Table 6. Contaminants Detected in Drinking Water Samples Collected from Schools

Contaminant[1]	Typical Source of Contaminant	Units[2]	Screening Level[3]	Basis for Screening Level	EDWM Summary – First Quarter Apr – Jun 2024		EDWM Summary – Second Quarter Jul – Sept 2024		EDWM Summary – Third Quarter Oct – Dec 2024		EDWM Summary – Fourth Quarter Jan – Mar 2025	
					No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]
Contaminants of Concern												
Benzene	Discharge from factories; Leaching from gas storage tanks and landfills	ppb	5	MCL	0/172	--	0/175	--	0/174	--	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Ethylbenzene	Discharge from petroleum refineries	ppb	700	MCL	0/172	--	0/175	--	0/174	--		
Toluene	Discharge from petroleum factories	ppb	1,000	MCL	0/172	--	0/175	--	0/174	--		
Xylenes (Total)	Discharge from petroleum factories; Discharge from chemical factories	ppb	10,000	MCL	0/172	--	0/175	--	0/174	--		
1-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/172	--	0/175	--	0/174	--		
2-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/172	--	0/175	--	0/174	--		
Naphthalene	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant	ppb	--[8]	--[8]	0/172	--	0/175	--	0/174	--		
Total Petroleum Hydrocarbons (Total)	TPH is petroleum and can contaminate drinking water through spills and other releases into the environment	ppb	--[5]	--[5]	0/172	--	0/175	--	0/174	--		
Total Organic Carbon (TOC)	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources	ppb	4,000[6]	ISP	0/172	--	0/175	--	4/174	200 – 210 (203)		
Free Chlorine[7]	Water additive used to control microbes	ppb	4,000	ISP	182/187	10 – 910 (348)	223/223	10 – 1,000 (330)	192/192	20 – 1,460 (536)		
Metals												
Copper	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	1,300	AL	172/172	4.4 – 388 (61)	175/175	6.7 – 374 (54)	174/174	5.1 – 287 (51)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Lead	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	15	AL	103/172	0.13 – 12 (0.35)	117/175	0.13 – 1.4 (0.22)	99/174	0.13 – 4.8 (0.28)		
Mercury	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland	ppb	2	MCL	0/172	--	0/175	--	3/174	0.028 – 0.046 (0.034)		
Volatile Organic Compounds (VOCs)												
Total trihalomethanes (sum of chloroform, bromoform, bromodichloromethane, and di-bromochloromethane)	By-product of drinking water disinfection	ppb	80	MCL	118/172	0.26 – 22 (2.2)	102/175	0.26 – 18 (2.4)	125/174	0.26 – 26 (3.1)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Semi-Volatile Organic Compounds (SVOCs)												
Benzo(a)pyrene	Leaching from linings of water storage tanks and distribution lines	ppb	0.2	MCL	3/172	0.013 – 0.026 (0.021)	10/175	0.013 – 0.026 (0.018)	3/174	0.012 – 0.019 (0.016)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Phenanthrene	Phenanthrene is found in heavy oils, coal tar, and is used in the preservation of wood as well as in the manufacture of dyes, plastics and pesticides	ppb	--[8]	--[8]	--[9]	--	1/79	0.27 – 0.27 (0.27)	0/174	--		

Notes:

[1] This table focuses on JP-5/other fuel-related analytes detected in drinking water samples collected during this period from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT. Samples were also tested for water quality parameters (see Table A-1 in Appendix A) which provide additional information for the evaluation of overall water quality in the System. This information is available for review on the Safe Waters Webpage (https://jbphh-safewaters.org/).

[2] All results are reported in parts per billion (ppb). This refers to the amount (or concentration) of a contaminant in the water.

[3] Results of the drinking water samples will be compared to EPA's Safe Drinking Water Act (SDWA) maximum contaminant level (MCLs), SDWA action levels (ALs), and DOH incident specific parameters (ISPs) - where indicated.

[4] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.

[5] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.

[6] Total Organic Carbon (TOC) test results report any constituent containing carbon, many of which are naturally occurring and some of which may be man-made.

[7] Chlorine is used as an additive to drinking water for disinfection purposes.

[8] No established MCL from EPA.

[9] This analyte was added to the EDWM Plan in August 2024; therefore, this analyte was not analyzed for during Q1 of EDWM and or during July 2024 (first month of Q2 of EDWM).

Cells highlighted in green indicate the water sample results were below their respective MCL, AL, or ISP.

Acronyms and explanation of terms used in this table are presented in Appendix A.

Table 7. Contaminants Detected in Drinking Water Samples Collected from Child Development Centers

Contaminant[1]	Typical Source of Contaminant	Units[2]	Screening Level[3]	Basis for Screening Level	EDWM Summary – First Quarter Apr – Jun 2024		EDWM Summary – Second Quarter Jul – Sept 2024		EDWM Summary – Third Quarter Oct – Dec 2024		EDWM Summary – Fourth Quarter Jan – Mar 2025	
					No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]
Contaminants of Concern												
Benzene	Discharge from factories; Leaching from gas storage tanks and landfills	ppb	5	MCL	0/126	--	0/134	--	0/126	--	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Ethylbenzene	Discharge from petroleum refineries	ppb	700	MCL	0/126	--	0/134	--	0/126	--		
Toluene	Discharge from petroleum factories	ppb	1,000	MCL	0/126	--	1/134	0.26 – 0.26 (0.26)	0/126	--		
Xylenes (Total)	Discharge from petroleum factories; Discharge from chemical factories	ppb	10,000	MCL	0/126	--	0/134	--	0/126	--		
1-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/126	--	0/134	--	0/126	--		
2-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/126	--	0/134	--	0/126	--		
Naphthalene	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant	ppb	--[8]	--[8]	0/126	--	0/134	--	0/126	--		
Total Petroleum Hydrocarbons (Total)	TPH is petroleum and can contaminate drinking water through spills and other releases into the environment	ppb	--[5]	--[5]	0/126	--	0/134	--	0/126	--		
Total Organic Carbon (TOC)	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources	ppb	4,000[6]	ISP	0/126	--	0/134	--	5/126	200 – 220 (214)		
Free Chlorine[7]	Water additive used to control microbes	ppb	4,000	ISP	150/150	40 – 950 (455)	198/200	20 – 1,200 (420)	165/165	20 – 1,620 (603)		
Metals												
Copper	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	1,300	AL	126/126	5.2 – 228 (53)	134/134	3.5 – 372 (48)	126/126	5.8 – 285 (51)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Lead	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	15	AL	60/126	0.13 – 7.7 (0.52)	52/134	0.13 – 1.8 (0.39)	60/126	0.13 – 1.4 (0.38)		
Mercury	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland	ppb	2	MCL	2/126	0.059 – 0.075 (0.067)	1/134	0.037 – 0.037 (0.037)	3/126	0.058 – 0.081 (0.068)		
Volatile Organic Compounds (VOCs)												
Total trihalomethanes (sum of chloroform, bromoform, bromodichloromethane, and di-bromochloromethane)	By-product of drinking water disinfection	ppb	80	MCL	55/126	0.25 – 4.8 (1.3)	55/134	0.36 – 4.8 (1.4)	71/126	0.26 – 3.6 (1.4)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Semi-Volatile Organic Compounds (SVOCs)												
Benzo(a)pyrene	Leaching from linings of water storage tanks and distribution lines	ppb	0.2	MCL	1/126	0.019 – 0.019 (0.019)	9/134	0.012 – 0.026 (0.017)	1/126	0.026 – 0.026 (0.026)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	

Notes:
[1] This table focuses on JP-5/other fuel-related analytes detected in drinking water samples collected during this period from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT. Samples were also tested for water quality parameters (see Table A-1 in Appendix A) which provide additional information for the evaluation of overall water quality in the System. This information is available for review on the Safe Waters Webpage (https://jbphh-safewaters.org/).
[2] All results are reported in parts per billion (ppb). This refers to the amount (or concentration) of a contaminant in the water.
[3] Results of the drinking water samples will be compared to EPA's Safe Drinking Water Act (SDWA) maximum contaminant level (MCLs), SDWA action levels (ALs), and DOH incident specific parameters (ISPs) - where indicated.
[4] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
[5] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.
[6] Total Organic Carbon (TOC) test results report any constituent containing carbon, many of which are naturally occurring and some of which may be man-made.
[7] Chlorine is used as an additive to drinking water for disinfection purposes.
[8] No established MCL from EPA.
Cells highlighted in green indicate the water sample results were below their respective MCL, AL, or ISP.
Acronyms and explanation of terms used in this table are presented in Appendix A.

Table 8. Contaminants Detected in Drinking Water Samples Collected from Other Locations

Contaminant[1]	Typical Source of Contaminant	Units[2]	Screening Level[3]	Basis for Screening Level	EDWM Summary – First Quarter Apr – Jun 2024		EDWM Summary – Second Quarter Jul – Sept 2024		EDWM Summary – Third Quarter Oct – Dec 2024		EDWM Summary – Fourth Quarter Jan – Mar 2025	
					No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]
Contaminants of Concern												
Benzene	Discharge from factories; Leaching from gas storage tanks and landfills	ppb	5	MCL	0/41	--	0/43	--	0/41	--	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Ethylbenzene	Discharge from petroleum refineries	ppb	700	MCL	0/41	--	0/43	--	0/41	--		
Toluene	Discharge from petroleum factories	ppb	1,000	MCL	0/41	--	0/43	--	0/41	--		
Xylenes (Total)	Discharge from petroleum factories; Discharge from chemical factories	ppb	10,000	MCL	0/41	--	0/43	--	0/41	--		
1-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/41	--	0/43	--	0/41	--		
2-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[8]	--[8]	0/41	--	0/43	--	0/41	--		
Naphthalene	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant	ppb	--[8]	--[8]	0/41	--	0/43	--	0/41	--		
Total Petroleum Hydrocarbons (Total)	TPH is petroleum and can contaminate drinking water through spills and other releases into the environment	ppb	--[5]	--[5]	0/41	--	0/43	--	0/41	--		
Total Organic Carbon (TOC)	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources	ppb	4,000[6]	ISP	0/41	--	1/43	200 – 200 (200)	4/41	210 – 240 (220)		
Free Chlorine[7]	Water additive used to control microbes	ppb	4,000	ISP	54/54	10 – 1,050 (421)	68/68	20 – 1,900 (320)	52/53	20 – 1,890 (523)		
Metals												
Copper	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	1,300	AL	41/41	4.0 – 250 (57)	43/43	3.5 – 254 (64)	41/41	9.0 – 273 (62)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Lead	Corrosion of household plumbing systems; Erosion of natural deposits	ppb	15	AL	22/41	0.13 – 0.60 (0.32)	27/43	0.13 – 1.2 (0.34)	24/41	0.13 – 0.92 (0.32)		
Volatile Organic Compounds (VOCs)												
Total trihalomethanes (sum of chloroform, bromoform, bromodichloromethane, and di-bromochloromethane)	By-product of drinking water disinfection	ppb	80	MCL	25/41	0.26 – 8.0 (1.8)	27/43	0.35 – 6.5 (1.7)	22/41	0.36 – 4.8 (1.7)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Semi-Volatile Organic Compounds (SVOCs)												
Benzo(a)pyrene	Leaching from linings of water storage tanks and distribution lines	ppb	0.2	MCL	5/41	0.018 – 0.036 (0.025)	1/43	0.018 – 0.018 (0.018)	1/41	0.025 – 0.025 (0.025)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	

Notes:
[1] This table focuses on JP-5/other fuel-related analytes detected in drinking water samples collected during this period from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT. Samples were also tested for water quality parameters (see Table A-1 in Appendix A) which provide additional information for the evaluation of overall water quality in the System. This information is available for review on the Safe Waters Webpage (https://jbphh-safewaters.org/).
[2] All results are reported in parts per billion (ppb). This refers to the amount (or concentration) of a contaminant in the water.
[3] Results of the drinking water samples will be compared to EPA's Safe Drinking Water Act (SDWA) maximum contaminant level (MCLs), SDWA action levels (ALs), and DOH incident specific parameters (ISPs) - where indicated.
[4] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.
[5] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.
[6] Total Organic Carbon (TOC) test results report any constituent containing carbon, many of which are naturally occurring and some of which may be man-made.
[7] Chlorine is used as an additive to drinking water for disinfection purposes.
[8] No established MCL from EPA.
Cells highlighted in green indicate the water sample results were below their respective MCL, AL, or ISP.
Acronyms and explanation of terms used in this table are presented in Appendix A.

Table 9. Contaminants Detected in Drinking Water Samples Collected from Hydrants

Contaminant[1]	Typical Source of Contaminant	Units[2]	Screening Level[3]	Basis for Screening Level	EDWM Summary – First Quarter Apr – Jun 2024		EDWM Summary – Second Quarter Jul – Sept 2024		EDWM Summary – Third Quarter Oct – Dec 2024		EDWM Summary – Fourth Quarter Jan – Mar 2025	
					No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]	No. of Detects out of Samples	Minimum – Maximum (Average)[4]
Contaminants of Concern												
Benzene	Discharge from factories; Leaching from gas storage tanks and landfills	ppb	5	MCL	0/376	--	0/360	--	0/385	--	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Ethylbenzene	Discharge from petroleum refineries	ppb	700	MCL	0/376	--	0/360	--	0/385	--		
Toluene	Discharge from petroleum factories	ppb	1,000	MCL	0/376	--	0/360	--	0/385	--		
Xylenes (Total)	Discharge from petroleum factories; Discharge from chemical factories	ppb	10,000	MCL	0/376	--	0/360	--	0/385	--		
1-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[9]	--[9]	0/376	--	0/360	--	0/385	--		
2-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[9]	--[9]	0/376	--	0/360	--	0/385	--		
Naphthalene	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant	ppb	--[9]	--[9]	0/376	--	1/360	0.27 – 0.27 (0.27)	0/385	--		
Total Petroleum Hydrocarbons (Total)	TPH is petroleum and can contaminate drinking water through spills and other releases into the environment	ppb	--[5]	--[5]	3/376	48 – 1,552 (579)	1/360	64 – 64 (64)	3/386	65 – 143 (98)		
Total Organic Carbon (TOC)	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources	ppb	4,000[6]	ISP	34/376	200 – 1,800 (375)	19/360	200 – 1,000 (357)	28/385	200 – 2,000 (393)		
Free Chlorine[7]	Water additive used to control microbes	ppb	4,000	ISP	382/382	20 – 1,100 (429)	340/340	20 – 1,000 (440)	330/332	20 – 1,210 (566)		
Metals – Not Analyzed												
Volatile Organic Compounds (VOCs)												
1,2-Dibromoethane (EDB)	Pesticide for felled logs and beehives; chemical intermediate for dyes, resins, waxes, and gums	ppb	0.05	MCL	1/121[8]	0.0085 – 0.0085 (0.0085)	1/114	0.020 – 0.020 (0.020)	1/117	0.020 – 0.020 (0.020)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	
Total trihalomethanes (sum of chloroform, bromoform, bromodichloromethane, and di-bromochloromethane)	By-product of drinking water disinfection	ppb	80	MCL	211/376	0.25 – 32 (3.5)	198/360	0.25 – 29 (3.6)	225/385	0.25 – 43 (4.2)		
Semi-Volatile Organic Compounds (SVOCs)												
Benzo(a)pyrene	Leaching from linings of water storage tanks and distribution lines	ppb	0.2	MCL	25/368	0.013 – 0.027 (0.017)	15/360	0.010 – 0.033 (0.018)	9/385	0.011 – 0.035 (0.019)	These samples will be collected between January and March 2025. Results will be reported in the Fourth EDWM Quarterly Report.	

Notes:

[1] This table focuses on JP-5/other fuel-related analytes detected in drinking water samples collected during this period from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT. Samples were also tested for water quality parameters (see Table A-1 in Appendix A) which provide additional information for the evaluation of overall water quality in the System. This information is available for review on the Safe Waters Webpage (https://jbphh-safewaters.org/).

[2] All results are reported in parts per billion (ppb). This refers to the amount (or concentration) of a contaminant in the water.

[3] Results of the drinking water samples will be compared to EPA's Safe Drinking Water Act (SDWA) maximum contaminant level (MCLs), SDWA action levels (ALs), and DOH incident specific parameters (ISPs) - where indicated.

[4] These numbers are the minimum and maximum values from all the sample test results. The average (or mathematical mean) includes all sample test results with a detectable contaminant. An average is the sum of the results (excluding non-detects) divided by the total number results with detection only.

[5] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.

[6] Total Organic Carbon (TOC) test results report any constituent containing carbon, many of which are naturally occurring and some of which may be man-made.

[7] Chlorine is used as an additive to drinking water for disinfection purposes.

[8] 1,2-Dibromoethane (EDB) was not included in the first draft of the EDWM Plan. After consultation with EPA and DOH, this chemical, along with other VOCs/SVOCs, were added to the list of chemicals analyzed during EDWM beginning in June 2024.

[9] No established MCL from EPA.

Cells highlighted in green indicate the water sample results were below their respective MCL, AL, or ISP.

Acronyms and explanation of terms used in this table are presented in Appendix A.

Table 10. Contaminants Detected in Drinking Water Samples Collected from Source Water (Waiawa Shaft – Post-Chlorination)

Contaminant[1]	Typical Source of Contaminant	Units[2]	Screening Level	Basis for Screening Level[3]	Sample Period: October 2024			Sample Period: November 2024			Sample Period: December 2024		
					No. of Detects out of Samples	Level Detected	Meets Screening Level? (Yes / No)	No. of Detects out of Samples	Level Detected	Meets Screening Level? (Yes / No)	No. of Detects out of Samples	Level Detected	Meets Screening Level? (Yes / No)
Contaminants of Concern													
Benzene	Discharge from factories; Leaching from gas storage tanks and landfills	ppb	5	MCL	0/1	--	Yes	0/1	--	Yes	0/1	--	Yes
Ethylbenzene	Discharge from petroleum refineries	ppb	700	MCL	0/1	--	Yes	0/1	--	Yes	0/1	--	Yes
Toluene	Discharge from petroleum factories	ppb	1,000	MCL	0/1	--	Yes	0/1	--	Yes	0/1	--	Yes
Xylenes (Total)	Discharge from petroleum factories; Discharge from chemical factories	ppb	10,000	MCL	0/1	--	Yes	0/1	--	Yes	0/1	--	Yes
1-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites.	ppb	--[4]	--[4]	0/1	--	--	0/1	--	--	0/1	--	--
2-Methylnaphthalene	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites	ppb	--[4]	--[4]	0/1	--	--	0/1	--	--	0/1	--	--
Naphthalene	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant	ppb	--[4]	--[4]	0/1	--	--	0/1	--	--	0/1	--	--
Total TPH	TPH is petroleum and can contaminate drinking water through spills and other releases into the environment	ppb	--[5]	--[5]	0/1	--	--	0/1	--	--	0/1	--	--
Total Organic Carbon (TOC)[6]	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources	ppb	--[4]	--[4]	0/1	--	--	0/1	--	--	0/1	--	--
Free Chlorine[7]	Water additive used to control microbes	ppb	4,000	ISP	1/1	660	Yes	1/1	450	Yes	1/1	310	Yes
Metals – Not Analyzed													
Volatile Organic Compounds (VOCs) – ND													
Synthetic Organic Compounds (SOCs) or Semi-Volatile Organic Compounds (SVOCs) – ND													

Notes:

[1] This table focuses on JP-5/other fuel-related analytes detected in drinking water samples collected during this period from drinking water samples collected as part of the EDWM Plan as well as the results from drinking water samples collected by the WQAT. Samples were also tested for water quality parameters (see Table A-1 in Appendix A) which provide additional information for the evaluation of overall water quality in the System. This information is available for review on the Safe Waters Webpage (https://jbphh-safewaters.org/).

[2] All results are reported in parts per billion (ppb). This refers to the amount (or concentration) of a contaminant in the water.

[3] Results of the drinking water samples will be compared to EPA's Safe Drinking Water Act (SDWA) maximum contaminant level (MCLs), SDWA action levels (ALs), and DOH incident specific parameters (ISPs) - where indicated.

[4] This chemical does not have an MCL.

[5] There is no established MCL for TPHs. For the purposes of the EDWM Plan, all detections of TPH will be investigated further to determine if JP-5/other fuel-related analytes are present in the System.

[6] Total Organic Carbon (TOC) test results report any constituent containing carbon, many of which are naturally occurring and some of which may be man-made

[7] Chlorine is used as an additive to drinking water for disinfection purposes.

Cells highlighted in green indicate the water sample results were below their respective MCL, AL, or ISP.

Acronyms and explanation of terms used in this table are presented in Appendix A.

Appendix A

Extended Drinking Water Monitoring
Frequently Asked Questions

What is the purpose of this EDWM Quarterly Sampling Results Report?

This Report presents the testing results from drinking water samples that were collected from residences, schools, CDCs, other non-residential buildings, hydrants, and source water (i.e., Waiawa Shaft) to continue to demonstrate that the November 2021 release of JP-5 or other fuels are not impacting the JBPHH drinking water system and ensure that the water meets all state and federal standards. The Hawaii Department of Health (DOH) health advisory was amended after the first four stages of the Drinking Water Distribution System Recovery Plan were completed in each Zone[24] and the health advisory on the System was lifted as of 26 October 2022. As of March 2024, two years of the LTM were completed. The JBPHH PWS #HI0000360 and AMR PWS #HI0000337 is committed to ensuring tap water continues to be safe for human consumption.

We are sharing this information with you to keep you updated on your community's water quality.

What was found?

The tables on the previous pages present all chemicals of concern that were detected in drinking water samples collected during EDWM. This report, together with the data collected, demonstrates that the drinking water provided by the System meets U.S. EPA and DOH drinking water standards and JP-5 or other fuels are not impacting the System. To assess drinking water results, the Navy used EPA and DOH MCL standards for drinking water. Results of the drinking water samples are analyzed in accordance with the final EDWM Plan finalized on 23 October 2024.

What did the Navy test for?

Drinking water, including bottled water, can contain small amounts of some contaminants. The presence of these analytes does not necessarily indicate that water poses a health risk. More information about the analytes tested can be obtained by calling the Hawaii DOH Safe Drinking Water Branch at: (**808) 586 – 4258**.

In order to ensure that drinking water is safe to drink, EPA and Hawaii DOH regulate the number of certain constituents in water provided by public water systems. For this incident, the primary categories of monitored constituents include TPHs, VOCs, SOCs/SVOCs, metals, and TOC, as listed in Table A-1. A description of these contaminant categories can be found under *Explanation of Terms* located at the end of this report. The full list of analytes that were tested are summarized in the table below and the results are presented in the laboratory reports that are located at: https://jbphh-safewaters.org.

Table A-1: EDWM ANALYTICAL LIST (as of October 2024)

Analytical Method	Analyte	CASRN	Residential Priority Buildings Sampling	Hydrant Sampling	Waiawa Shaft Sampling Source (Raw) Water / Post Chlorination	NAH Shaft Sampling Source (Raw) Water	Red Hill Shaft Sampling Source (Raw) Water
EPA 524.2	Benzene[1]	71-43-2	All	M	M/M	n/a	n/a

[24] Drinking Water Distribution System Recovery Plan: https://www.cpf.navy.mil/Portals/52/Drinking-Water-Distribution- System-Recovery-Plan.pdf.

Analytical Method	Analyte	CASRN	Residential Priority Buildings Sampling	Hydrant Sampling	Waiawa Shaft Sampling Source (Raw) Water / Post Chlorination	NAH Shaft Sampling Source (Raw) Water	Red Hill Shaft Sampling Source (Raw) Water
EPA 524.2	n-Butylbenzene[1]	104-51-8	All	M	M/M	n/a	n/a
EPA 524.2	sec-Butylbenzene[1]	135-98-8	All	M	M/M	n/a	n/a
EPA 524.2	Tert-Butylbenzene[1]	98-06-6	All	M	M/M	n/a	n/a
EPA 524.2	Ethyl Benzene[1]	100-41-4	All	M	M/M	n/a	n/a
EPA 524.2	Isopropylbenzene[1]	98-82-8	All	M	M/M	n/a	n/a
EPA 524.2	n-Propylbenzene[1]	103-65-1	All	M	M/M	n/a	n/a
EPA 524.2	Toluene[1]	108-88-3	All	M	M/M	n/a	n/a
EPA 524.2	1,2,4-Trimethylbenzene[1]	95-63-6	All	M	M/M	n/a	n/a
EPA 524.2	1,3,5-Trimethylbenzene[1]	108-67-8	All	M	M/M	n/a	n/a
EPA 524.2	Xylenes (Total) [1] • m,p-Xylenes • o-Xylenes	 1330-20-7 95-47-6	All	M	M/M	n/a	n/a
EPA 524.2	Total trihalomethanes(TTHM): • Chloroform • Bromoform • Bromodichloromethane • Dibromochloromethane	TTHMs 67-66-3 75-25-2 75-27-4 124-48-1	All	M	n/a/M	n/a	n/a
EPA 525.2	1-Methylnaphthalene[1]	90-12-0	All	M	M/M	n/a	n/a
EPA 525.2	2-Methylnaphthalene[1]	91-57-6	All	M	M/M	n/a	n/a
EPA 525.2	Naphthalene[1]	91-20-3	All	M	M/M	n/a	n/a
EPA 525.2	Acenaphthylene[2]	208-96-8	All	M	M/M	n/a	n/a
EPA 525.2	Anthracene[2]	120-12-7	All	M	M/M	n/a	n/a
EPA 525.2	Benzo[a]pyrene[2]	50-32-8	All	M	M/M	n/a	n/a
EPA 525.2	Benzo[b]fluoranthene[2]	205-82-3	All	M	M/M	n/a	n/a
EPA 525.2	Benzo[k]fluoranthene[2]	207-08-9	All	M	M/M	n/a	n/a
EPA 525.2	Benzo[g,h,i]perylene[2]	191-24-2	All	M	M/M	n/a	n/a
EPA 525.2	Chrysene[2]	218-01-9	All	M	M/M	n/a	n/a
EPA 525.2	Dibenz[a,h]anthracene[2]	53-70-3	All	M	M/M	n/a	n/a
EPA 525.2	Fluorene[2]	86-73-7	All	M	M/M	n/a	n/a
EPA 525.2	Indeno[1,2,3-cd]pyrene[2]	193-39-5	All	M	M/M	n/a	n/a
EPA 525.2	Phenanthrene[2]	85-01-8	All	M	M/M	n/a	n/a
EPA 525.2	Pyrene2	129-00-0	All	M	M/M	n/a	n/a
EPA 8260 EPA 8015 EPA 8015	JP-5 as Combined Total Petroleum Hydrocarbons (TPH)- Gasoline, Diesel, and Oil Ranges	PCHG PCHD MOIL	All	M	M/M	n/a	n/a
EPA 200.8	Copper	7440-50-8	All	n/a	n/a	n/a	n/a
EPA 200.8	Lead	7439-92-1	All	n/a	n/a	n/a	n/a
EPA 245.1	Mercury	7439-94-7	All	n/a	n/a	n/a	n/a
SM 5310 B, C or D, or EPA 415.3, Rev 1.2	Total Organic Carbon (TOC)	TOC	All	M	M/M	n/a	n/a
HACH 8021 (Based on SM 4500-Cl G)	Chlorine, Free (Field Test): • Sample Hot Water • Sample Cold Water	7782-50-5	All	M	n/a/M	n/a	n/a
EPA 170.1	Temperature (Field Test): • Sample Hot Water • Sample Cold Water	TMP	All	M	M/M	Q	Q
EPA 150.3	pH (Field Test)	pH	All	M	M/M	Q	Q
SM 2510 B	Conductivity (Field Test)	CONDUCT	All	M	M/M	Q	Q
SM 2130 B	Turbidity (Field Test)	TURBID	All	M	M/M	Q	Q
SM 2320 B	Total Alkalinity	TOTAL_AL	All	M	M/M	Q	Q

Analytical Method	Analyte	CASRN	Residential Priority Buildings Sampling	Hydrant Sampling	Waiawa Shaft Sampling Source (Raw) Water / Post Chlorination	NAH Shaft Sampling Source (Raw) Water	Red Hill Shaft Sampling Source (Raw) Water
		K					
EPA 200.7	Cations: • Sodium • Potassium • Calcium • Magnesium • Iron • Manganese	 7440-23-5 7440-09-7 7440-70-2 7439-95-4 7439-89-6 7439-96-5	n/a	n/a	M/M	Q	Q
EPA 200.7	Silica	7631-86-9	n/a	n/a	M/M	Q	Q
EPA method 300.0 Rev. 2.1	**Anions**: • Chloride • Sulfate • Fluoride • Ortho-Phosphate-P • Bromide	 16887-00-6 14808-79-8 16984-48-8 14265-44-2 24959-67-9	n/a	n/a	M/M	Q	Q
EPA method 300.1 Rev. 1.0	**Anions**: • Chlorite • Bromate Chlorate	 14998-27-7 15541-45-4 14866-68-3	n/a	n/a	M/M	Q	Q
EPA 504.1	Ethylene Dibromide	106-93-4	n/a	Q	Q	n/a	n/a
EPA 8270SIM	2-(2-Methoxyethoxy)-Ethanol	111-77-3	n/a	Q	Q	n/a	n/a

Notes:
All: Indicates every location will be sampled, M: Indicates monthly sampling, Q: Indicates quarterly sampling, n/a: Indicates not applicable. The analytical laboratory will report non-detected results to the MDL. Values between the MDL and MRL will be flagged as estimates ('J' flag).
[1] These analytes are primary components of JP-5 (i.e., these analytes comprise a significant amount [based on their molar fraction in JP-5 samples obtained from Red Hill on July 5, 2023, and their solubility in water] of the composition of JP-5 dissolved in water) and are key indicators of the presence/absence of JP-5 in drinking water samples.
[2] These analytes are potentially associated with other petroleum compounds (e.g., other fuels, oils, and lubricants).
[3] Lead and copper concentrations in drinking water regulations do not have MCL's, only Action Levels. Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. For the purposes of EDWM sampling, lead and copper concentrations in drinking water will be screened at the regulatory Action Levels, though these are not samples collected for the purposes of compliance with federal and state lead and copper regulations.

What happened leading up to the implementation of the EDWM Plan?

On November, 2021, jet fuel was released at the Red Hill Bulk Fuel Storage Facility. Subsequent reporting of fuel-like smell or visual sheen in addition to complaints of health issues from ingestion or dermal contact with the Navy and Army system water were received by the Navy and DOH. On November 28, 2021, the Navy reported that a chemical release of petroleum, which is a hazardous substance, entered the JBPHH drinking water distribution system from the Red Hill Shaft. This release triggered an emergency response and DOH issuance of a public health advisory on November 29, 2021, for the entire JBPHH Public Water System No. HI0000360 (JBPHH System).

The Hawaii DOH, EPA, Navy, and Army formed the Interagency Drinking Water Systems Team (IDWST) to work on a coordinated effort to restore safe drinking water to all Navy Water System users. LTM began in March 2022, immediately following the amendment of the health advisories in each Zone. During LTM Period 6, the frequency of TPH detections increased, primarily in the diesel-range organics (TPH-D). None of these detections has exceeded the DOH's incident-specific parameter (ISP) level of 266 micrograms per liter (µg/L). Since October 2023, the Navy has proactively worked with EPA and DOH on actions to investigate these low-level TPH detections in drinking water samples collected from the JBPHH System. These actions have included inspection and sampling of hot water heaters and interior faucets to ensure there is no

contaminant buildup, as well as collection of samples from various points throughout the System.

During the week of 29 January 2024, an interagency team comprised of SMEs from the EPA, DOH, Navy, and Navy contractors met to discuss low-level TPH detections reported in drinking water samples collected from the System. Investigation into the low-level TPH detections indicated these results were likely attributed to a reaction between chlorine in the water (from treatment) and a surrogate used in the lab when analyzing the samples. The Navy voluntarily committed to extend enhanced monitoring beyond the end of LTM, and developed the EDWM Plan to analyze drinking water samples using a revised analytical method following the completion of LTM.[25]

LTM of the PWS #HI0000360 and PWS #HI0000337 was completed by April 2024. EDWM incorporates lessons learned from LTM (including refinements to analytical methods) and focuses on JP-5 and other fuel-related analytes. EDWM sampling took place for one year after the completion of LTM (i.e., April 2024 – March 2025), and focus on locations not previously tested during LTM.

Where does our water come from?

As of the time of this report, the source of water for the Navy Water System solely comes from the Navy Waiawa Shaft, which was not impacted by the release of JP-5 that occurred at Red Hill in November 2021. The Waiawa Shaft has been sampled, and the EPA and the DOH confirmed that it meets all State and Federal drinking water standards. The Waiawa Shaft will be sampled (in subsequent months during EDWM) in accordance with EPA and the DOH requirements.

What has the Navy done to ensure drinking water is safe for human consumption?

Working closely with the DOH, EPA, and other regulatory bodies, the Navy is working to ensure compliance with all state and federal Standards. The Navy has taken several steps to ensure drinking water continues to be safe for human consumption. These steps have included:

- Completing two years of LTM (March 2022 – March 2024). LTM was implemented as a method of surveillance to continuously ensure that the water is safe to drink, meets all State and Federal drinking water standards, and confirms the System is not being impacted by JP-5 or other fuel-related analytes.
- Implementing the EDWM Plan (April 2024 – March 2025). The purpose of EDWM is to continue to ensure drinking water provided by the System is safe for human consumption by implementing lessons learned from LTM, sampling more residences, and enhancing the ongoing sampling efforts.
- Establishing the Navy Closure Task Force-Red Hill (NCTF-RH) to oversee the safe and deliberate decommissioning of the Red Hill Bulk Fuel Storage Facility, which was the original source of the fuel release. NCTF-RH is dedicated to protecting the environment and public health during the decommissioning process. For more information on the decommissioning of Red Hill, please visit: https://www.navyclosuretaskforce.navy.mil.
- Expanding the availability of the Red Hill Clinic. The goal of the Red Hill Clinic is to offer assessments and care for individuals who may have been exposed to contaminated water. This clinic provides support to those experiencing symptoms related to contamination. For more

[25] For more information on the low-level TPH detections observed during LTM and the results of the investigation into these results, see the Summary of Technical Memorandum Regarding Low-Level Hydrocarbon Detections Observed During Long-Term Monitoring at: https://jbphh-safewaters.org/public/Tech_Memo_JBPHH_LOE's_LTM_TPH_Detects_Redacted_Rev.pdf.

information on medical assistance, please visit: https://nhchawaii.tricare.mil/Clinics/BHC-Makalapa/Red-Hill-Clinic.

- Establishing the WQAT, made up of experts to focus on the quality of drinking water. The team is available to collect drinking water samples to test for the presence of TPH and conduct a water quality investigation. To dispatch the WQAT, residents can call the JBPHH Drinking Water Call Center at **(808) 210 – 6968**.
- Updating the Safe Waters Webpage to include up-to-date sampling results and findings, available to all residents at JBPHH. The Safe Waters Webpage provides accurate information about the current status of water and ongoing sampling efforts to ensure public safety. For more information, visit: https://jbphh-safewaters.org.
- Conducting extensive per- and polyfluoroalkyl substances (PFAS) sampling of the Navy's drinking water wells (June 2024 – June 2025). The results of these sampling efforts are available online at https://jbphh-safewaters.org.

When was EDWM sampling conducted?

EDWM began in April 2024. Per the approved EDWM Plan, drinking water samples will continue to be collected from residences, schools, CDCs, non-residences, and hydrants on a monthly basis for one year (i.e., April 2024 – March 2025). The results of EDWM sampling will be summarized on a quarterly basis.

Where were EDWM samples taken?

Per the approved EDWM Plan, samples will be collected at houses that were not previously sampled within LTM, with the goal of sampling 100% of the un-sampled houses on the System by the end of EDWM. Approximately 65% of residences within each Zone were sampled during LTM, which leaves approximately 35% remaining to be sampled during EDWM.

For more information on where samples were taken, please visit the Safe Waters Website at: https://jbphh-safewaters.org

Where can I get more information about the potential health effects associated with these contaminants?

Hawaii Department of Health (DOH)

https://health.hawaii.gov/about/navy-water-system-quality-updates/.

Call the DOH Safe Drinking Water Branch at 808-586-4258

US Environmental Protection Agency (EPA)

https://www.epa.gov/ground-water-and-drinking-water/forms/online-form-epas-office-ground-water-and-drinking-water.

Call EPA Region 9's Environmental Information Center at 1-866-372-9378

Explanation of Terms and Acronyms used in this Report

Action Level (AL). This AL is for Lead and Copper. The AL is a measure of the effectiveness of the corrosion control treatment in water systems. The AL is not a standard for establishing a safe level of lead or copper. The AL is the point at which certain provisions of the proposed standards must be initiated.

Contaminant. Contaminant is any physical, chemical, biological, or radiological substance or matter in water, and can be either healthy or unhealthy, depending on the particular substance and concentration. It could also be a physical parameter monitored such as pH or temperature.

DOH. Hawaii Department of Health

DOH Environmental Action Level (EAL). The DOH Environmental Action Levels (EALs) are concentrations of contaminants in drinking water and other media (e.g., soil, soil gas, and groundwater) below which the contaminants are assumed not to pose a significant threat to human health or the environment. Exceeding these EAL does not necessarily indicate that contamination at the site poses environmental hazards but generally warrants additional investigation.

EPA U.S. Environmental Protection Agency

Free Chlorine. Chlorine is added to drinking water as part of the treatment process. Adding chlorine is the most common way to disinfect drinking water. Disinfection kills bacteria, viruses, and other microorganisms that could cause disease or illness. Chlorine is effective and continues to keep the water safe as it travels from the treatment plant to the consumer's tap. Chlorine measurements provide another line of evidence for evaluating drinking water quality.

Incident Specific Parameter (ISP). To more comprehensively monitor and respond to this specific petroleum contamination of drinking water, the DOH identified contaminants that require additional action prior to amending the Health Advisory. The ISPs are used as a line of evidence to evaluate the data generated in each Zone during the investigation conducted by the IDWST.

Maximum Contaminant Level (MCL). An MCL is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. The MCL is set to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.

Metals. Metals are not derived from living sources and in general do not contain carbon. Metals include antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, copper, cyanide, fluoride, lead, mercury, nitrate, nitrite, selenium, and thallium. These contaminants get into drinking water supplies through industrial discharge or spills, erosion of natural deposits, corrosion, sewage discharge, fertilizer runoff, and other sources.

ND. Non-Detect

Project Specific Screening Level. DOH uses multiple criteria to assess the safety of the drinking water including maximum contaminant levels (MCLs) previously established environmental action levels (EALs) and incident specific parameters (ISPs).

Synthetic Organic Compounds (SOCs)/Semi-Volatile Organic Compounds (SVOCs). SOCs and SVOCs may be used interchangeably and are man-made, organic (carbon-based) chemicals that are less volatile than Volatile Organic Contaminants (VOCs). They are used as pesticides, defoliants, fuel additives, and as ingredients for other organic chemicals.

Total Organic Carbon (TOC). TOC is naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources.

Total Petroleum Hydrocarbons (TPH). TPH is a term used to describe a large family of several hundred chemical compounds that come from crude oil. Crude oil is used to make petroleum products, which can contaminate the environment. TPH is comprised of detected results from TPH-D, TPH-G, and TPH-O. TPHs are analyzed using EPA Method 8015D and 8260. These methods are not fuel-specific. TPH results reported using these methods represent the total concentration (or amount) of hydrocarbons present in the sample. Hydrocarbons can be petroleum (e.g., crude oil, JP-5, and other fuels), biogenic (i.e., organic compounds produced by living organisms such as algae or bacteria), or pyrogenic (i.e., produced via combustion). Many hydrocarbons are naturally occurring and are present in drinking water.

Total Trihalomethanes (TTHM). TTHM is the sum of the concentration in milligrams per liter of the trihalomethane compounds (trichloromethane [chloroform], dibromochloromethane, bromodichloromethane and tribromomethane [bromoform]).

Units. A unit is the concentration of contaminant found in the water. For this report, the units are expressed in U.S. Standard Units.

U.S. Standard Unit (Name)	Acronym	Equivalent International System of Units (Name)	Acronym
parts per billion	ppb	micrograms per liter	mg/L

Volatile Organic Compounds (VOCs). VOCs are a class of chemicals that contain carbon and evaporate, or volatilize, easily into air at room temperature. VOCs are found in a variety of commercial, industrial, and residential products, including gasoline, solvents, cleaners and degreasers, paints, inks and dyes, and pesticides.

Pollardwater Food Grade Anti-Seize

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 1/30/2024 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	Pollardwater Food Grade Anti-Seize
Product code	:	P67751

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Lubricant where there may be incidental food contact

1.3. Supplier

Pollardwater
200 Atlantic Avenue
New York, NY 11040
T 800-437-1146

1.4. Emergency telephone number

Emergency number	:	Infotrac: North America 1-800-535-5053| Australia 1-300-366-961 | Germany 0800-181-2926 | International 011-1-352-323-3500 (collect) | China 400-120-076

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US)	:	Warning
Hazard statements (GHS US)	:	H361 - Suspected of damaging fertility or the unborn child
Precautionary statements (GHS US)	:	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P308+P313 - If exposed or concerned: Get medical advice/attention. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

37.33% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
52.13% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
36.73% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
white mineral oil (petroleum)	CAS-No.: 8042-47-5	40-60
benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	CAS-No.: 68411-46-1	<2.5
zinc oxide	CAS-No.: 1314-13-2	1-3

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact : None under normal conditions.
Symptoms/effects after eye contact : None under normal conditions.
Symptoms/effects after ingestion : None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Do not use a heavy water stream. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No fire hazard.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store locked up.

Packaging materials : Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

white mineral oil (petroleum) (8042-47-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	5 mg/m³ (Inhalable fraction)

zinc oxide (1314-13-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Zinc oxide
ACGIH OEL TWA	2 mg/m³ (Respirable fraction)
ACGIH OEL STEL	10 mg/m³ (Respirable fraction)
Remark (ACGIH)	TLV® Basis: Metal fume fever
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Zinc oxide
OSHA PEL TWA	5 mg/m³ (Fume) 15 mg/m³ (Total dust) 5 mg/m³ (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	light brown
Odor	:	No data available
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	478 °F (248°C), ASTM D 92
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not applicable.
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Pollardwater Food Grade Anti-Seize	
Unknown acute toxicity (GHS US)	37.33% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral) 52.13% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal) 36.73% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

white mineral oil (petroleum) (8042-47-5)	
LD50 oral rat	> 5000 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 5 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Read-across, Inhalation (aerosol), 14 day(s))

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
LD50 oral rat	> 5000 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (Equivalent or similar to OECD 402, Rat, Male / female, Experimental value, Skin)

zinc oxide (1314-13-2)	
LD50 oral rat	> 5000 mg/kg (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 5.7 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))

Skin corrosion/irritation : Not classified

white mineral oil (petroleum) (8042-47-5)	
pH	No data available in the literature

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
pH	5.1 – 6.2 (1 %, 20 - 25 °C)

zinc oxide (1314-13-2)	
pH	6.07 – 6.55 (2.9E-4 %, 20 °C, OECD 105: Water Solubility)

Serious eye damage/irritation : Not classified

white mineral oil (petroleum) (8042-47-5)	
pH	No data available in the literature

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
pH	5.1 – 6.2 (1 %, 20 - 25 °C)

zinc oxide (1314-13-2)	
pH	6.07 – 6.55 (2.9E-4 %, 20 °C, OECD 105: Water Solubility)

Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified.
Reproductive toxicity : Suspected of damaging fertility or the unborn child.
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified.

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
NOAEL (oral,rat,90 days)	25 mg/kg body weight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified
Viscosity, kinematic : No data available

white mineral oil (petroleum) (8042-47-5)	
Viscosity, kinematic	3 – 20.5 mm²/s (40 °C, ISO 3104: Determination of kinematic viscosity and calculation of dynamic viscosity, Niet experimenteel bepaald; afgeleid van de indeling)

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
Viscosity, kinematic	353 mm²/s (40 °C, OECD 114: Viscosity of Liquids)

zinc oxide (1314-13-2)	
Viscosity, kinematic	Not applicable (solid)

Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact : None under normal conditions.
Symptoms/effects after eye contact : None under normal conditions.
Symptoms/effects after ingestion : None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

white mineral oil (petroleum) (8042-47-5)	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Nominal concentration)

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	51 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)
zinc oxide (1314-13-2)	
LC50 - Fish [1]	1.55 mg/l (96 h, Danio rerio, Static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	1 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Zinc ion)

12.2. Persistence and degradability

Pollardwater Food Grade Anti-Seize	
Persistence and degradability	Not rapidly degradable
white mineral oil (petroleum) (8042-47-5)	
Persistence and degradability	Not readily biodegradable in water.
benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
Persistence and degradability	Not readily biodegradable in water.
zinc oxide (1314-13-2)	
Persistence and degradability	Biodegradability in soil: not applicable,Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

white mineral oil (petroleum) (8042-47-5)	
BCF - Other aquatic organisms [1]	1216 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	5.18 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
BCF - Fish [1]	1730 (42 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)
Partition coefficient n-octanol/water (Log Pow)	6.66 (Experimental value, OECD 123: Partition Coefficient (1-Octanol/Water): Slow-Stirring Method, 23 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
zinc oxide (1314-13-2)	
BCF - Fish [1]	78 – 2060 (14 day(s), Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	1.53 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

white mineral oil (petroleum) (8042-47-5)	
Surface tension	No data available in the literature, Data waiving
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.64 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for adsorption in soil.
benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)	
Mobility in soil	60460 Source: EPISUITE
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.754 – 8.947 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Adsorbs into the soil.
zinc oxide (1314-13-2)	
Surface tension	Not applicable (solid)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.2 (log Koc, Literature study)
Ecology - soil	Low potential for adsorption in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Disposal must be done according to official regulations.
Additional information : Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated

DOT	TDG	IMDG	IATA
14.4. Packing group			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

DOT
Not regulated

TDG
Not regulated

IMDG
Not regulated

IATA
Not regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

white mineral oil (petroleum) (8042-47-5)

Listed on the Canadian DSL (Domestic Substances List)

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)

Listed on the Canadian DSL (Domestic Substances List)

zinc oxide (1314-13-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

white mineral oil (petroleum) (8042-47-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene (68411-46-1)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

zinc oxide (1314-13-2)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Benzenesulfonicacid,dodecyl-,calciumsalt(26264-06-2)	U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities; U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List
zinc oxide(1314-13-2)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List
chalk(1317-65-3)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H361	Suspected of damaging fertility or the unborn child

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

December 6, 2024

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water**
EDWM GRO Detection Investigation
Zone J1, Hydrant 2A

Attention CDR Dunn:

On Friday, October 25, 2024, AECOM (AECOM Technical Services, Inc.) was notified of a gasoline range organics (GRO) detection of 143 micrograms per liter (µg/L) in sample J1-DL-0018352-24275-N, collected at Hydrant 2A (also known as Hydrant 123) in Zone J1, as well as a GRO detection of 64.5 µg/L in the corresponding field duplicate (J1-DL-0018352-24275-3-N) collected on October 22, 2024. The samples were analyzed at (b) (4) , via gas chromatography-mass spectrometry using United States Environmental Protection Agency SW-846 Method 8260. An investigation was initiated to determine if the reported detections are likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **All evidence points to the conclusion that this detection is unrelated to JP-5 and is due to the presence of isopropyl alcohol (IPA) in the sample, which was likely introduced during decontamination of the hydrant fitting.**

The data reviewed to develop this conclusion included the following:

- Sample chromatograms
- Reference standard chromatograms
- Laboratory quality control (QC) data
- Results of supplemental analyses

A detailed discussion of the investigation into this result is provided in Attachment A-1, and results of supplemental analyses are provided in Attachment A-2. Attachment B contains documentation of a stand-down meeting which reviewed hydrant sampling procedures. Attachment C provides a glossary of terms used in the investigation.

As discussed in Attachment A-1, IPA was identified in these samples via multiple analytical methods at two different laboratories. This suggests that the compound was present in the sample as received at the laboratories and is not the result of laboratory contamination. It is extremely unlikely that the water in the hydrant contained IPA, suggesting that the compound was introduced into the sample at the time of collection.

AECOM's standard operating procedure (SOP) for hydrant sampling specifies decontamination of the hydrant spigot fitting with IPA using a spray bottle, followed by rinsing with deionized (DI) water prior to purging and sampling. The DI rinse and purging should have eliminated any traces of IPA, but it is possible that the IPA contacted another piece of equipment or the sampler's glove and was introduced into the sample. It is also possible that some IPA was on the outside of the spray bottle or remained in the nozzle. If the spray bottle was in the vicinity of the sampling container, volatilized IPA could have been introduced into the sampling containers.

AECOM concludes that the water from Hydrant 2A does not contain petroleum hydrocarbons. The GRO detection is the result of contamination with IPA in conjunction with decontamination procedures conducted on the hydrant prior to sampling. AECOM initiated a stand-down meeting and reviewed sampling and decontamination procedures with all sampling personnel. Sampling personnel were reminded of the need to change gloves after decontamination and flushing prior to sample collection. AECOM updated the hydrant sampling SOP on November 20, 2024, to clarify these procedures, and will ensure that any new sampling personnel are provided with SOP training prior to collecting any samples and will continue to conduct periodic refresher training with existing staff. Any modifications to SOPs will result in training for the entire team.

Questions regarding this letter should be addressed to (b) (6).

Yours sincerely,

(b) (6)
(b) (6)
Senior Project Chemist
(b) (6)

(b) (6)
CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment A-1: Chromatographic Interpretation of Samples J1-DL-0018352-24275-N and J1-DL-0018352-24275-3-N

Attachment A-2: Tier 2 Laboratory Report L2463458

Attachment B: Tailgate Meeting Attendance November 6, 2024

Attachment C: Glossary of Terms

Attachment A-1: Chromatographic Interpretation of Samples J1-DL-0018352-24275-N and J1-DL-0018352-24275-3-N

Appendix C. Tier 1 Analysis Tech Memos

Attachment A-1: *Chromatographic Interpretation of Samples J1-DL-0018352-24275-N and J1-DL-0018352-24275-3-N*

Review of the chromatograms for both J1-DL-0018352-24275-N and J1-DL-0018352-24275-3-N indicate that the reported gasoline range organics (GRO) concentrations are due almost exclusively to two discrete peaks that come out (elute) on the chromatogram just beyond three minutes; there are no other significant peaks, and a fuel pattern was not observed. Since these samples were analyzed via GC/MS, the laboratory was able to isolate these peaks and perform mass spectral analysis. The peaks have been identified as acetone and isopropyl alcohol (IPA), with the larger peak identified as IPA. IPA is a chemical used to decontaminate hydrant fittings prior to sampling. It is believed that IPA was introduced into the sample in the field as a direct result of the decontamination process. The acetone is attributed to an impurity in the IPA since acetone is frequently used in the manufacturing of IPA, although it may have been introduced in the laboratory since acetone is a common laboratory contaminant.

GRO concentrations are calculated by summing the areas of all peaks eluting between the observed retention times for pentane (C5) and dodecane (C12), then subtracting out the areas attributable to the internal standards and surrogate standard which are added by the laboratory prior to analysis and are not part of the sample as received.

The chromatograms from the EPA Method 8260 analyses of J1-DL-0018352-24275-N and J1-DL-0018352-24275-3-N are shown in Figure 1 and Figure 2, respectively. Each chromatogram displays two peaks (outlined in a red box) that come out on the chromatogram (elute) between three and four minutes, two internal standards and one surrogate standard.

Figure 3 displays the J1-DL-0018352-24275-N chromatogram (black) overlayed with a gasoline calibration standard (green), retention time marker (blue) and JP-5 (red). The sample chromatogram does not display the characteristic multi-peak patterns of either gasoline or JP-5. Furthermore, both peaks in the sample elute between the retention times bracketed by the C5 (pentane) and C6 (hexane) markers. JP-5 does not begin to elute until the C9 (nonane) marker.

GC/MS methods such as EPA 8260 allow for the evaluation of mass spectra of specific peaks, which makes it possible to identify individual compounds. Therefore, the laboratory was able to identify the individual peaks in the chromatogram from the original analysis. The mass spectrum for the large peak eluting at 3.33 minutes is provided in Figure 4 and identifies the peak as IPA. The tailing peak shape, early RT, and mass spectrum are all consistent with IPA. Figure 5 presents the mass spectral analysis of the peak at 3.19 minutes and identifies it as acetone. The corresponding information for sample J1-DL-0018352-24275-N is provided in Figure 6 and Figure 7.

(b) (4) noted that IPA and acetone were detected in both samples analyzed via EPA Method 524.2, also a GC/MS method. These compounds were not detected in any associated method blanks analyzed by either EPA SW-846 Method 8260 or EPA Method 524.2.

(b) (4) was directed to send additional vials of both samples to (b) (4) in Mansfield, MA for the Tier 2 analyses identified in the EDWM plan, specifically Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO) Volatile Organics by EPA SW-846 Method 8260D. The laboratory reported approximately 131 µg/L of IPA and 29 µg/L of acetone in sample J1-DL-0018352-24275-N and 29 µg/L of IPA and 12 µg/L of acetone in sample J1-DL-0018352-24275-3-N. All other results were non-detect. These results support both the identification and approximate quantitation reported by (b) (4). No target or non-target compounds were detected in laboratory method blank. The laboratory report, L2463458, is provided in Attachment A-2.

Furthermore, the complete lack of any hydrocarbon detections or unresolved complex mixture supports the conclusion that the original detection was the result of incidental contamination in the field or laboratory, and not from the sampled hydrant water.

Figure 1. J1-DL-0018352-24275-N (Lab ID DA68523-4)

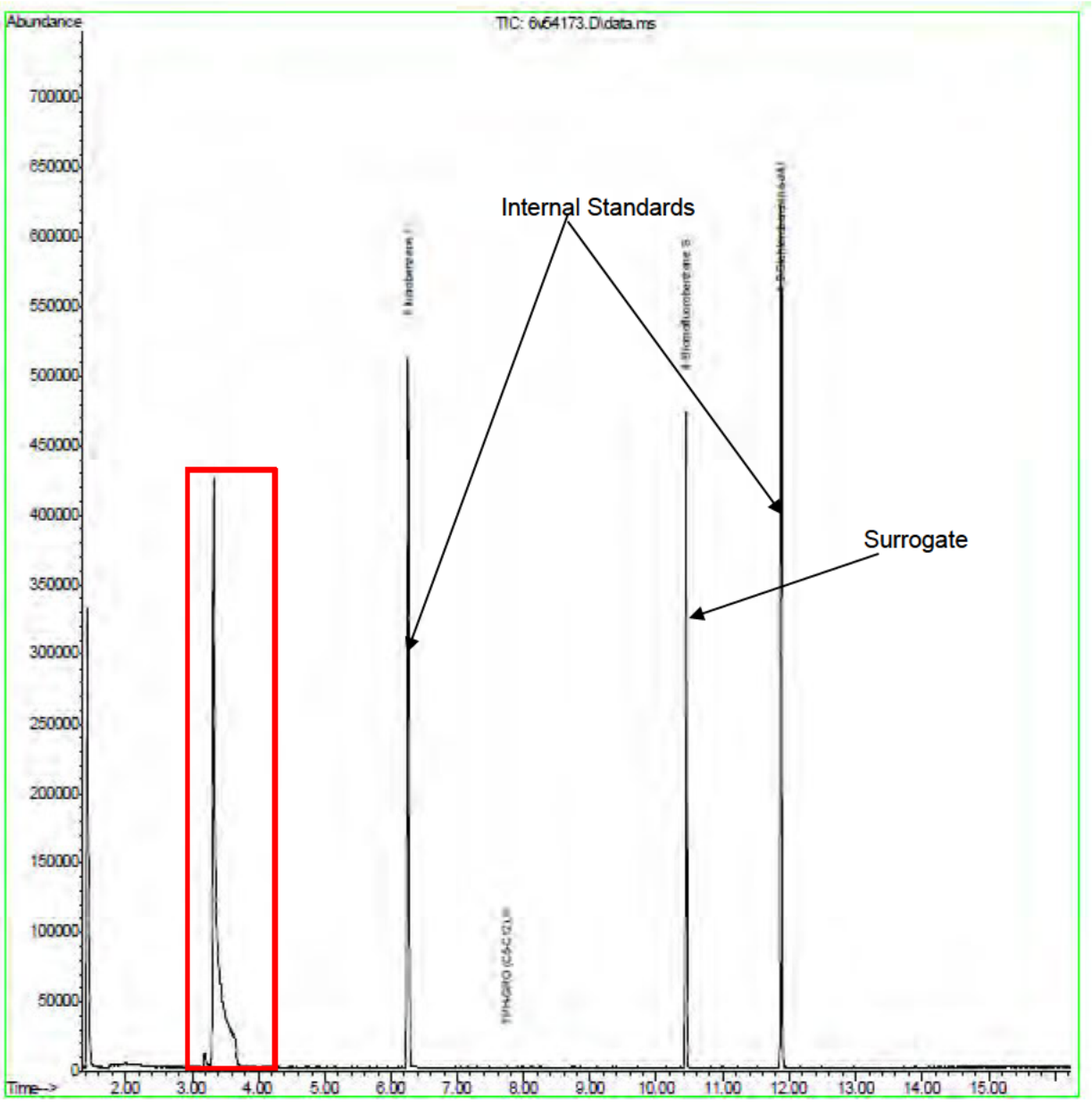


Figure 2. J1-DL-0018352-24275-3-N (Lab ID DA68523-5)

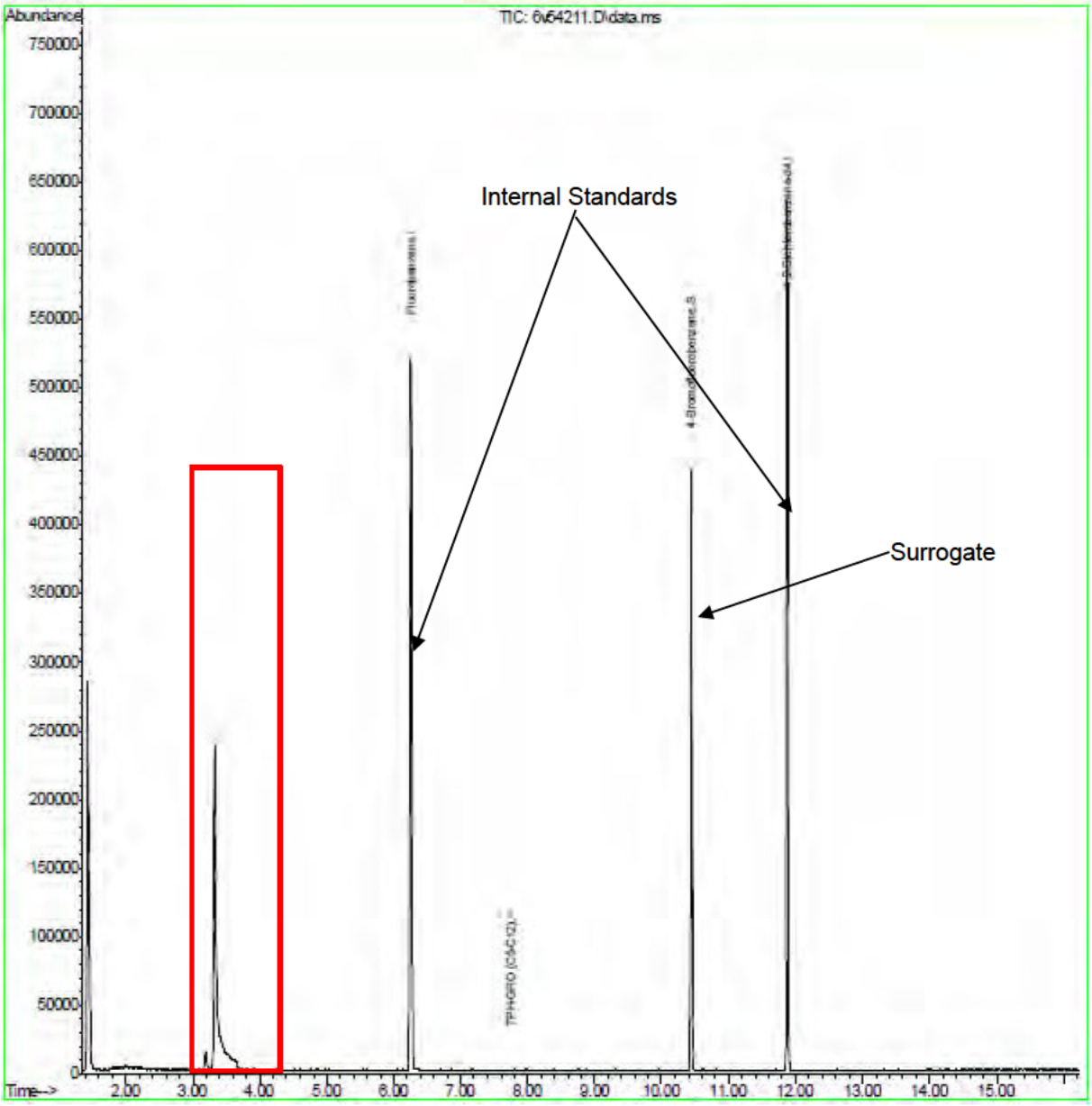


Figure 3. J1-DL-0018352-24275-N, overlayed with GRO standard (green), retention time marker standard (blue) and JP-5 (red)

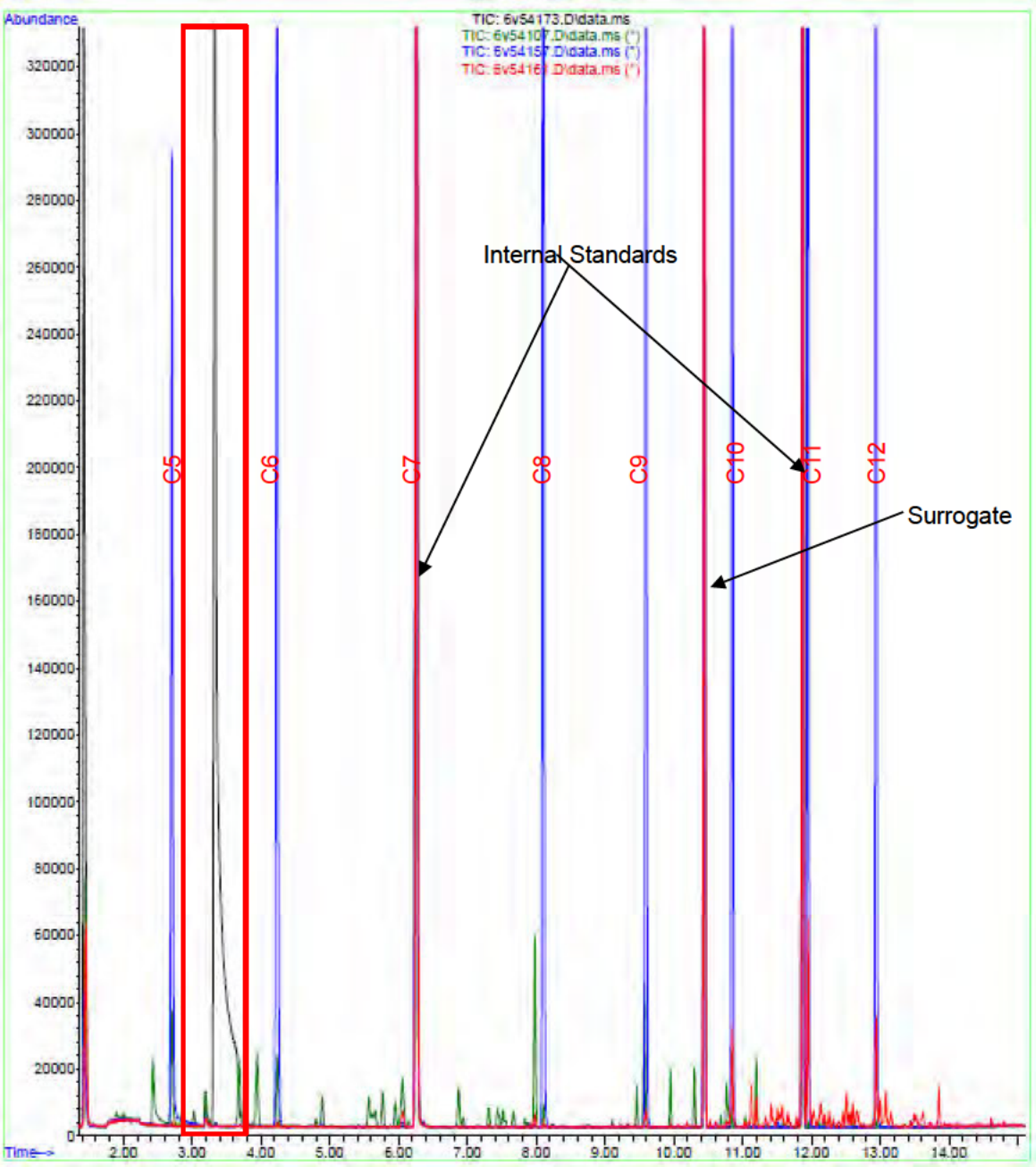


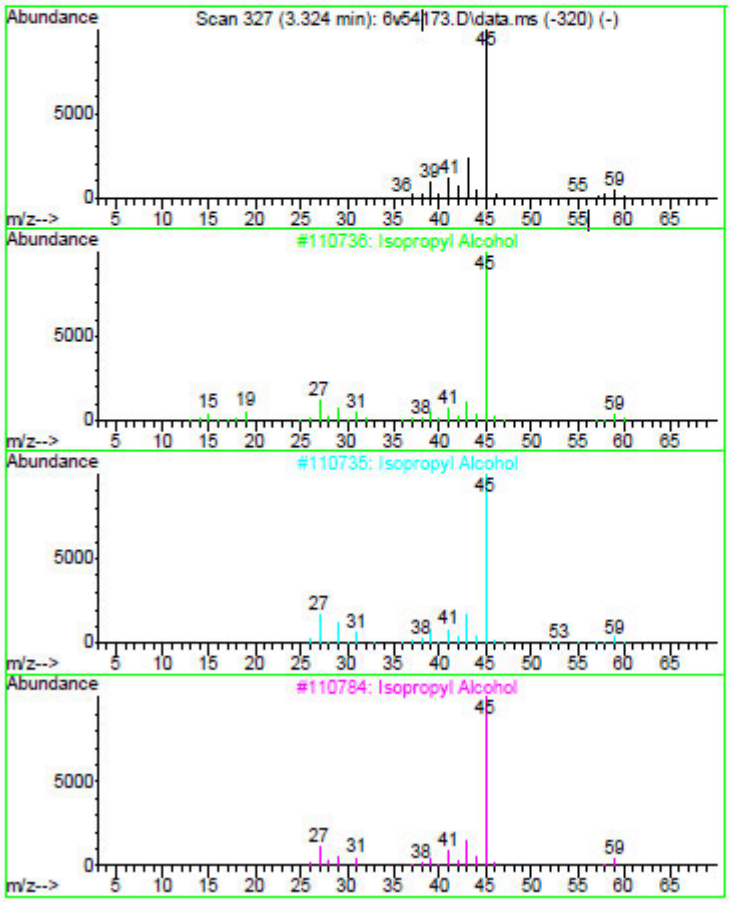
Figure 4. J1-DL-0018352-24275-N (8260 Mass Spectral Analysis of peak at 3.32 minutes)

****

Peak Number 2 Isopropyl Alcohol Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
3.324	89.08 ppb	1717700	Fluorobenzene	6.258

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Isopropyl Alcohol	60	C3H8O	000067-63-0	72
2	Isopropyl Alcohol	60	C3H8O	000067-63-0	64
3	Isopropyl Alcohol	60	C3H8O	000067-63-0	40
4	Hydrazine, 1,2-dimethyl-	60	C2H8N2	000540-73-8	9
5	Hydrazine, 1,2-dimethyl-, dihydr...	60	C2H8N2	000306-37-6	9



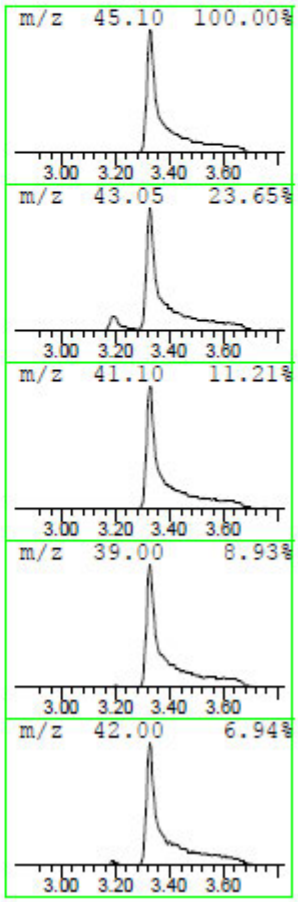


Figure 5. J1-DL-0018352-24275-N (8260 Mass Spectral Analysis of peak at 3.19 minutes)

```
**********************************************************************
Peak Number  1  Acetone                          Concentration Rank  2

  R.T.     EstConc          Area       Relative to ISTD         R.T.
----------------------------------------------------------------------
  3.196    1.09 ppb         21113   Fluorobenzene               6.258

 Hit# of  5    Tentative ID             MW  MolForm       CAS#        Qual
----------------------------------------------------------------------
 1 Acetone                              58  C3H6O         000067-64-1 9
 2 Acetone                              58  C3H6O         000067-64-1 9
 3 Acetone                              58  C3H6O         000067-64-1 9
 4 Acetone                              58  C3H6O         000067-64-1 9
 5 Acetone                              58  C3H6O         000067-64-1 7
```

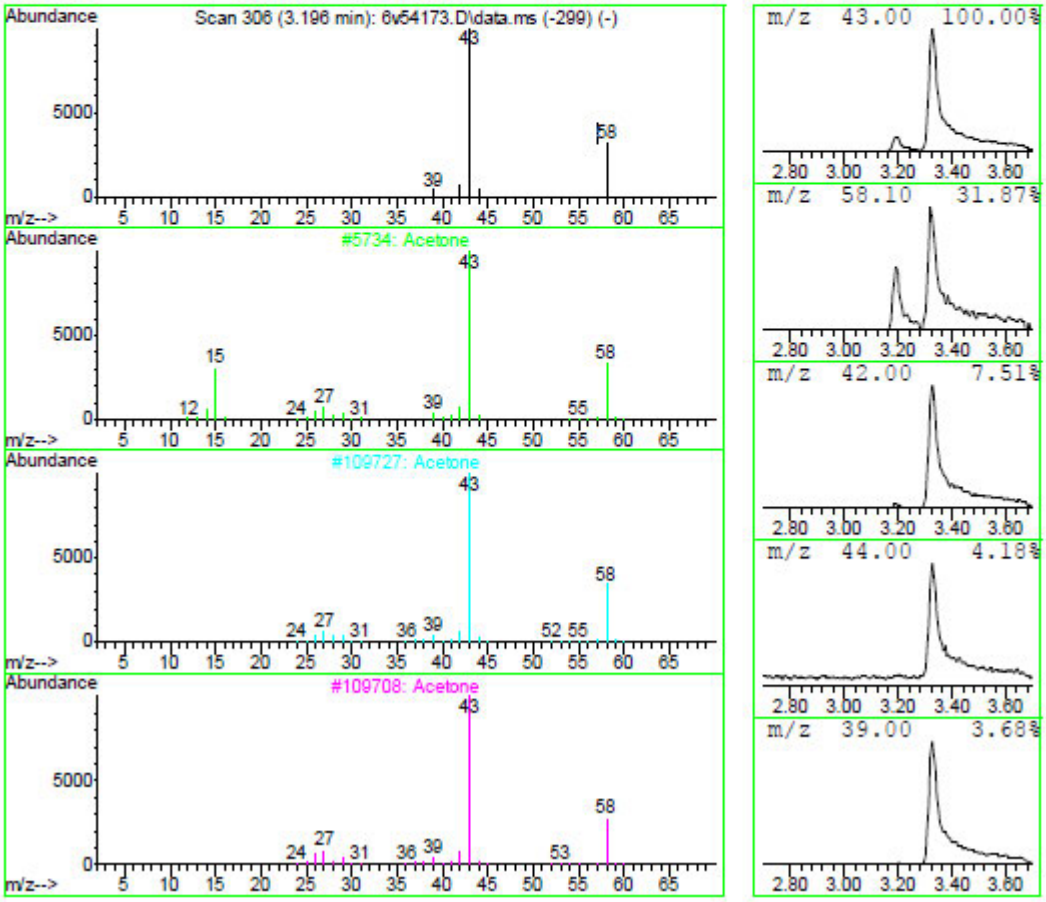
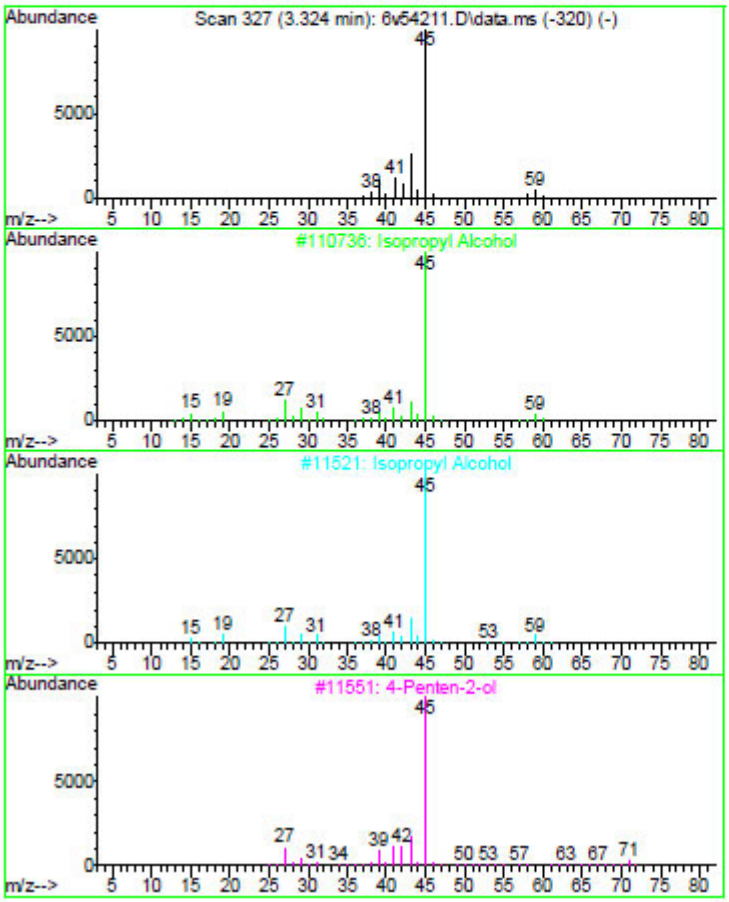


Figure 6. J1-DL-0018352-24275-3-N (8260 Mass Spectral Analysis of peak at 3.32 minutes)

```
**************************************************************************
Peak Number  2  Isopropyl Alcohol                 Concentration Rank  1

  R.T.      EstConc          Area       Relative to ISTD          R.T.
--------------------------------------------------------------------------
  3.324   37.83 ppb        746979   Fluorobenzene                 6.257

 Hit# of  5    Tentative ID              MW  MolForm       CAS#        Qual
--------------------------------------------------------------------------
 1 Isopropyl Alcohol                     60 C3H8O         000067-63-0 72
 2 Isopropyl Alcohol                     60 C3H8O         000067-63-0 56
 3 4-Penten-2-ol                         86 C5H10O        000625-31-0 9
 4 4-Penten-2-ol                         86 C5H10O        000625-31-0 9
 5 Hydrazine, 1,2-dimethyl-, dihydr...   60 C2H8N2        000306-37-6 9
```



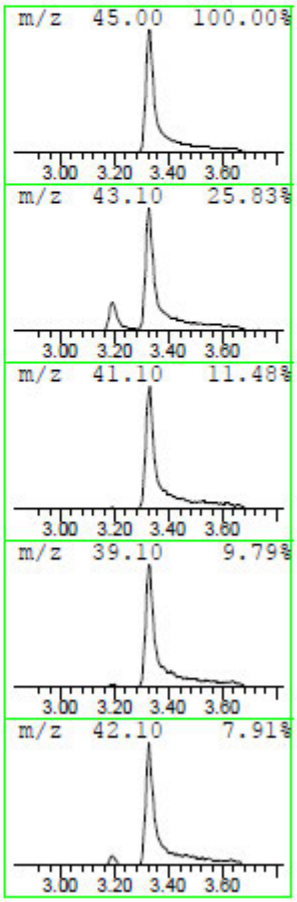
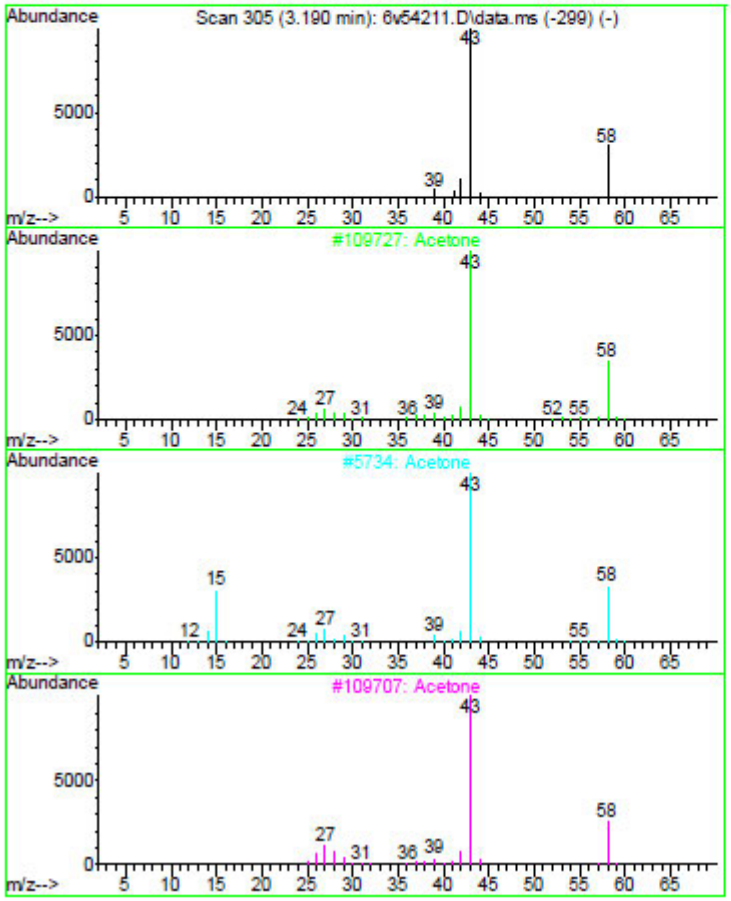


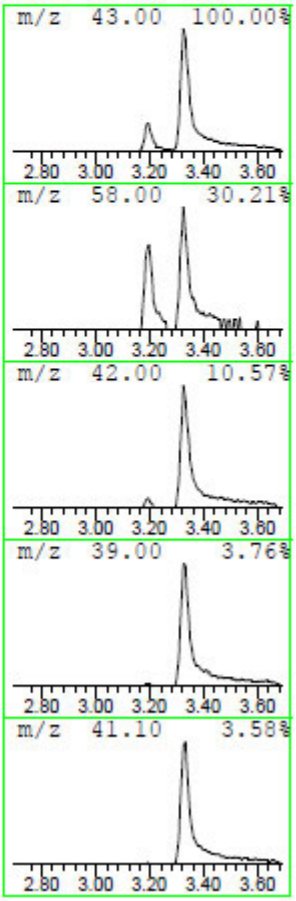
Figure 7. J1-DL-0018352-24275-3-N (8260 Mass Spectral Analysis of peak at 3.19 minutes)

Peak Number 1 Acetone Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
3.190	1.37 ppb	27041	Fluorobenzene	6.257

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Acetone	58	C3H6O	000067-64-1	9
2	Acetone	58	C3H6O	000067-64-1	9
3	Acetone	58	C3H6O	000067-64-1	9
4	Acetone	58	C3H6O	000067-64-1	9
5	Acetone	58	C3H6O	000067-64-1	7





Appendix C. Tier 1 Analysis Tech Memos

Attachment A-2: Tier 2 Laboratory Report L2463458

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2463458
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	CTO24F0139
Project Number:	60729369.00.46.01
Report Date:	11/08/24

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2463458
Report Date: 11/08/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2463458-01	J1-DL-0018352-24275-N	WATER	HONOLULU, HI	10/22/24 10:10	11/01/24
L2463458-02	J1-DL-0018352-24275-3-N	WATER	HONOLULU, HI	10/22/24 10:15	11/01/24

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2463458
Project Number:	60729369.00.46.01	**Report Date:**	11/08/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2463458
Project Number:	60729369.00.46.01	**Report Date:**	11/08/24

Case Narrative (continued)

Report Revision

November 8, 2024: L2463458-01 - the Client ID has been revised per client request..

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 11/08/24

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-01
Client ID: J1-DL-0018352-24275-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:10
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/01/24 17:44
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-01
Client ID: J1-DL-0018352-24275-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:10
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-01
Client ID: J1-DL-0018352-24275-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:10
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-01
Client ID: J1-DL-0018352-24275-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:10
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-01
Client ID: J1-DL-0018352-24275-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:10
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	160	J	ug/l			1
iso-Propyl Alcohol	131	NJ	ug/l			1
Acetone	29.0	NJ	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	102		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	93		70-130

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-02
Client ID: J1-DL-0018352-24275-3-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:15
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/01/24 18:55
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-02
Client ID: J1-DL-0018352-24275-3-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:15
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-02
Client ID: J1-DL-0018352-24275-3-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:15
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-02
Client ID: J1-DL-0018352-24275-3-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:15
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

SAMPLE RESULTS

Lab ID: L2463458-02
Client ID: J1-DL-0018352-24275-3-N
Sample Location: HONOLULU, HI

Date Collected: 10/22/24 10:15
Date Received: 11/01/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	40.5	J	ug/l			1
Acetone	11.7	NJ	ug/l			1
iso-Propyl Alcohol	28.8	NJ	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	103		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	92		70-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/24 19:25
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG1992724-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/24 19:25
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG1992724-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/24 19:25
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG1992724-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/24 19:25
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG1992724-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/24 19:25
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG1992724-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/24 19:25
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG1992724-5					
Tentatively Identified Compounds					
Total TIC Compounds	2.40	J	ug/l		
Methylene chloride	2.40	NJ	ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	108		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	90		70-130

(b) (4)

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369.00.46.01

Lab Number: L2463458

Report Date: 11/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG1992724-3 WG1992724-4								
1-Pentene	85		84		50-130	1		30
Pentane	82		84		50-130	2		30
Tertiary Butanol	107		106		50-130	1		30
Cyclopentane	89		89		50-130	0		30
2-Methylpentane	94		94		50-130	0		30
Methyl tert butyl ether	96		98		50-130	2		30
3-Methylpentane	98		95		50-130	3		30
1-Hexene	94		95		50-130	1		30
n-Hexane	91		90		50-130	1		30
Isopropyl Ether	98		101		50-130	3		30
Ethyl-Tert-Butyl-Ether	94		94		50-130	0		30
Methylcyclopentane	94		94		50-130	0		30
2,4-Dimethylpentane	100		102		50-130	2		30
Cyclohexane	95		94		50-130	1		30
2-Methylhexane	98		100		50-130	2		30
Benzene	102		103		50-130	1		30
2,3-Dimethylpentane	102		100		50-130	2		30
3-Methylhexane	92		91		50-130	1		30
Tertiary-Amyl Methyl Ether	85		86		50-130	1		30
Isooctane	96		99		50-130	3		30
Heptane	98		100		50-130	2		30
Methylcyclohexane	90		90		50-130	0		30
2-Methylheptane	92		94		50-130	2		30

(b) (4)

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369.00.46.01

Lab Number: L2463458

Report Date: 11/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG1992724-3 WG1992724-4								
3-Methylheptane	99		100		50-130	1		30
Toluene	98		100		50-130	2		30
Octane	98		98		50-130	0		30
Ethylbenzene	92		92		50-130	0		30
p/m-Xylene	97		98		50-130	1		30
Nonane (C9)	84		85		50-130	1		30
o-Xylene	95		96		50-130	1		30
Isopropylbenzene	97		98		50-130	1		30
n-Propylbenzene	97		99		50-130	2		30
1-Methyl-3-Ethylbenzene	94		94		50-130	0		30
1-Methyl-4-Ethylbenzene	102		104		50-130	2		30
1,3,5-Trimethylbenzene	98		99		50-130	1		30
1-Decene	84		85		50-130	1		30
1-Methyl-2-Ethylbenzene	98		100		50-130	2		30
Decane (C10)	100		102		50-130	2		30
1,2,4-Trimethylbenzene	96		96		50-130	0		30
sec-Butylbenzene	99		100		50-130	1		30
1-Methyl-4-N-Propylbenzene	90		91		50-130	1		30
n-Butylbenzene	97		98		50-130	1		30
1,2-Diethylbenzene	97		99		50-130	2		30
Undecane	96		95		50-130	1		30
N-Pentylbenzene	97		97		50-130	0		30
Dodecane (C12)	111		112		50-130	1		30

(b) (4)

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369.00.46.01

Lab Number: L2463458

Report Date: 11/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG1992724-3 WG1992724-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	99		100		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	101		102		70-130

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01
Lab Number: L2463458
Report Date: 11/08/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2463458-01A	Vial Ascorbic Acid/HCl preserved	A	NA		6.2	Y	Present/Intact		A2-PIANO8260(14)
L2463458-01B	Vial Ascorbic Acid/HCl preserved	A	NA		6.2	Y	Present/Intact		A2-PIANO8260(14)
L2463458-01C	Vial Ascorbic Acid/HCl preserved	A	NA		6.2	Y	Present/Intact		A2-PIANO8260(14)
L2463458-02A	Vial Ascorbic Acid/HCl preserved	A	NA		6.2	Y	Present/Intact		A2-PIANO8260(14)
L2463458-02B	Vial Ascorbic Acid/HCl preserved	A	NA		6.2	Y	Present/Intact		A2-PIANO8260(14)
L2463458-02C	Vial Ascorbic Acid/HCl preserved	A	NA		6.2	Y	Present/Intact		A2-PIANO8260(14)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	CTO24F0139	**Lab Number:**	L2463458
Project Number:	60729369.00.46.01	**Report Date:**	11/08/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2463458
Project Number:	60729369.00.46.01	**Report Date:**	11/08/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: CTO24F0139 **Lab Number:** L2463458

Project Number: 60729369.00.46.01 **Report Date:** 11/08/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4) **Facility**
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine, 2,6-Dichlorophenol.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4) **Facility**
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4) **Facility:**

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4) **Facility:**

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

(b) (4)

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab: 11/1/24

(b) (4) Job #: L2463458

Project Information

Project Name: CTO23F0139

Project Location: Honolulu, HI

Project #: 60729369.00.46.01

Project Manager: (b) (6)

(b) (4) Quote #:

Client Information

Client: AECOM

Address: 1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables / Billing Information

☐ FAX ☐ EMAIL ☐ Same as Client Info PO #: 1677061

☐ ADEx ☐ Add'l Deliverables

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

EDMS DB: JBPHH Drinking Water LTM; Event: Monthly EDWM October 2024; Zone: J1

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done ☐ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 SIM Parent and Alkylated PAHs	8015 Sat Hydrocarbons	8260 PIANO + TICs	Sample Specific Comments	TOTAL # BOTTLES
63458-01	J1-DL-0018352-24275	10/22/24	10:10	DW		☐	☐	☒		
-02	J1-DL-0018352-24275-3-N	10/22/24	10:15	DW		☐	☐	☒		

Container Type

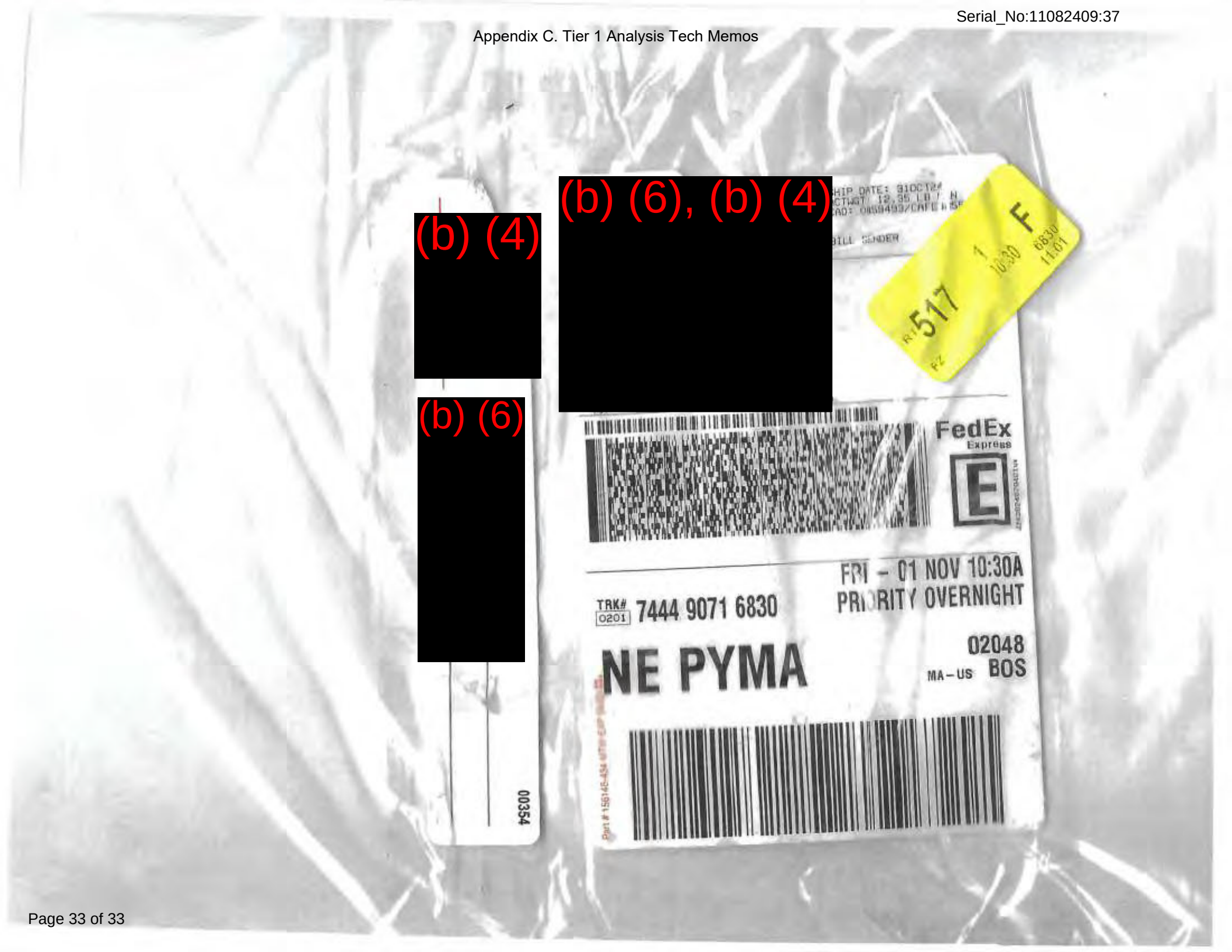
Preservative

(b) (6)

Relinquished By:	Date/Time	Received By:	Date/Time
	11/1/24 11:30	(b) (6)	11/1/24 10:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 101-08(HU) (rev. 8-JAN-12)


(b) (4)
(b) (6), (b) (4)
(b) (6)
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00354

Appendix C. Tier 1 Analysis Tech Memos

Attachment B: Tailgate Meeting Attendance November 6, 2024

Appendix C. Tier 1 Analysis Tech Memos

AECOM

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Instructions: Conduct meeting prior to sending crews to individual tasks. Require attendance of all AECOM employees and subcontractors. Invite personnel from simultaneous operations for coordination purposes. Review scope of work and briefly discuss required and applicable topics. **This meeting is a daily refresher, not a full orientation**. Task-specific discussions associated with Task Hazard Assessment (THA) follow this meeting at the task location immediately before individual task is started.

AECOM Supervisor Name: (b) (6)
Phone Number: (b) (6)

AECOM SH&E Rep. Name: (b) (6)
Phone Number: (b) (6)

Meeting Leader (b) (6)

DCS Americas - This form may be replaced by the electronic Daily Tailgate Meeting Tool. Link - Ecosystem Daily Tailgate Meeting App Site

Date: 10/ 6 /2024	Project Name/Location: Red Hill Extended Drinking Water Monitoring	Project Number: 60729369

Today's Scope of Work:
Extended Drinking Water Monitoring: Field Sampling Teams

Muster Point Location:	First Aid Kit Location:	Fire Extinguisher Location:	Spill Kit Location:
Field Vehicle	Field Vehicle Safety Kits	Field Vehicle Safety Kits	N/A

1. Required Topics

- [x] Fitness for Duty requirements, all sign in / sign out
- [x] Required training (incl. task specific) completed and current
- [x] SH&E Plan onsite - understood, reviewed, signed by all (incl. scope, preplanning hazard assessments / risk registers, controls, procedures, requirements, etc.)
- [x] Task Hazard Assessments (THAs) are to be reviewed and completed for each task immediately prior to conducting
- [x] STOP WORK Right & Responsibility- all task changes/changed conditions re-assess with THA
- [x] Requirement to report to supervisor any injury, illness, damage, near miss, unsafe act / condition
- [x] Emergency Response Plan – including muster point, first aid kit, fire extinguisher, clinic/hospital location
- [x] Personal Protective Equipment (PPE) - Required items per hazard assessments in good condition / in use by all
- [x] Equipment/machinery inspected (documented as required) and in good condition - operators properly trained/certified
- [x] Work area set up and demarcation/ barricades in place to protect workers, site staff, and the public
- [ ] Required checklists/records available, understood (describe):
- [ ] Lessons Learned / SH&E improvements (describe):

2. Discuss if Applicable to Today's Work

Check ☑ as reviewed or mark ■ as not applicable

- [x] Biological/ Chemical / Electrical Hazards
- [x] Ergonomics - Lifting, Body Position
- [ ] ■ Lock Out/ Tag Out
- [x] Short Service Employees - visual identifier and mentor/ oversight assignment
- [x] Simultaneous/ Neighbouring Operations
- [x] Slip/ Trip/ Fall Hazards
- [ ] ■ Specialized PPE Needs
- [ ] ■ Traffic Control
- [x] Waste Management/ Decontamination
- [x] Weather Hazards / Heat Stress / Cold Stress
- [ ] ■ Subcontractor Requirements (e.g., JHAs, THAs, procedures, reporting, etc.)
- [ ] ■ Work Permits / Plans required (e.g., Fall Protection, Confined Space, Hot Work, Critical Lifts, etc.); in place, understood (identify/attach):
- [ ] Other Topics (describe/attach): HYDRANT SAMPLING SOPs
- [ ] Client specific requirements (describe):

3. Daily Check Out by Site Supervisor

Describe incidents, near misses, observations or Stop Work interventions from today:	Describe Lessons Learned/ Improvement Areas from today:

The site is being left in a safe condition and work crew checked out as fit unless otherwise specified as above.

Site Supervisor Name (b) (6)	Signature (b) (6)	Date 10/ 6 /2024 Time (at end of day / shift)

Worker Acknowledgement / Sign In Sign Out sheets applicable to this meeting are on reverse and, if applicable, attached.

AECOM

11/6/24

All employees:

- **STOP WORK if concerned / uncertain about safety / hazard or additional precaution is not recorded on the THA.**
- **Be alert and communicate any changes in personnel or conditions at the worksite to the supervisor.**
- **Reassess task, hazards, & mitigations on an ongoing basis; amend the THA if needed.**

SITE WORKERS (including AECOM Contractors and Subcontractors): Your signature below means that you understand:

* The requirement to participate in creating, reviewing, & updating hazard assessments (THA) applicable to your task(s).
* The hazards & control measures associated with each task you are about to perform.
* The permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
* That no tasks or work is to be performed without a hazard assessment.
* Your authority & obligation to "Stop Work" intervene, speak up/ listen up.

Your initials (right columns) certify that you arrived & departed fit for duty, & have reported all incidents/near misses; meaning:

* You are physically and mentally fit for duty and have inspected your required PPE to ensure satisfactory condition.
* You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
* You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or impairment/fatigue issue to the AECOM Supervisor.
* You signed out as fit / uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
(b) (6)		In & Fit 0645 (b) (6)	Out & Fit
		In 0640	Out & Fit
		In 0650	Out & Fit (b) (6)
		In 0700	Out & Fit
		In 0700	Out & Fit
		In 0650	Out & Fit
		In 0645	Out & Fit
		In 064	Out & Fit (b) (6)
		In 0700	Out & Fit
		In 0700	(b) (6)

(Attach additional Site Worker sign-in/out sheets if needed) Identify number of attached sheets: _____

SITE VISITOR / SITE REPRESENTATIVE

Name	Company Name	Arrival Time	Departure Time	Signature

Attachment C: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. A mass spectrum is a type of plot of the ion signal as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

AECOM
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March 14, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Benzo(a)pyrene Detection Investigation Zone D3, Hickam Main Child Development Center (Building 1586H)**

Attention CDR Dunn:

Benzo(a)pyrene was detected at a concentration of 0.026 micrograms per liter (µg/L) in sample D3-TW-0015143-24306-N-2, collected from the custodial closet sink at the Hickam Main Child Development Center located at 80 Liliwai Street in Zone D3, on November 1, 2024. The sample was analyzed at (b) (4) via gas chromatography-mass spectrometry using United States Environmental Protection Agency Method 525.2 and reported in sample delivery group (SDG) DA68507B. This result is above the laboratory's reporting limit (RL) of 0.02 µg/L.

AECOM launched an investigation to determine if the reported detection is likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **AECOM concludes that based on multiple lines of evidence, this benzo(a)pyrene detection is not attributable to a petrogenic source and is unrelated to JP-5. Furthermore, it is likely that the benzo(a)pyrene found is due to minor contamination in the laboratory, which is not unusual at very low concentrations. AECOM concludes that benzo(a)pyrene was not present in the field sample.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control (QC) data
- Results of supplemental sampling and analysis (resampled December 4, 2024)

Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that was designated in the revised Extended Drinking Water Monitoring (EDWM) Plan (October 2024) as a compound that is potentially associated with petroleum compounds, and therefore, must be evaluated when detected above the reporting limit.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits (MDLs) and met the Data Quality Objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. One part of evaluating Benzo(a)pyrene is to send an additional sample to (b) (4) . They measure the amount of petroleum hydrocarbons and other potential indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the EDWM Program. Specifically, when evaluating Total Petroleum Hydrocarbon (TPH) detections, the PIANO and SHC methods can identify and quantitate individual hydrocarbon (with RLs of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. This additional analysis performed exceeds industry standards and goes beyond meeting the DQOs of EDWM.

Additional sample volume was not available from the November 1, 2024, sampling event for Tier 2 analyses. However, this is a location that is sampled monthly; therefore, this location was next sampled on December 4, 2024, and assigned a sample identification number of D3-TW-0015143-24336-N-2. At this time, volume was sent to (b) (4) for Tier 2 analyses ((b) (4) SDG L2471134). Sample bottles for the routine monthly analyses were sent to (b) (4) and reported in SDG DA69204**. There were no detections of benzo(a)pyrene or other PAHs in the December sample analyzed at either laboratory.**

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water in the Hickam Main Child Development Center does not contain benzo(a)pyrene nor any other petroleum compounds. The original detection of benzo(a)pyrene is most likely due to a laboratory artifact. AECOM is working with the laboratory to try to identify the mechanism by which the contaminant may have been introduced to the sample and will continue to do so. No additional action is currently recommended.

A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory report from Pace is provided in Attachment 2. Attachment 3 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6) at (b) (6).

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Chromatographic Interpretation of Sample D3-TW-0015143-24306-N-2

Attachment 2: (b) (4) Laboratory Report L2471134

Attachment 3: Glossary of Terms

Attachment 1: *Technical Review of Sample D3-TW-0015143-24306-N-2*

The chromatogram and mass spectrum for D3-TW-0015143-24306-N-2 were reviewed to verify that benzo(a)pyrene was correctly identified. The retention time and ion ratios met all criteria indicating that the peak was correctly identified as benzo(a)pyrene. The mass spectrum is presented as Figure 1.

All associated field and laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have led to a false positive result. Items reviewed included:

- Field reagent blank results
- Field duplicate results
- Method blank results
- Blank spike recoveries
- Surrogate standard recoveries
- Internal standard recoveries
- Initial calibration (ICAL) curve
- Initial calibration verification (ICV)
- Continuing calibration verification (CCV)

Benzo(a)pyrene was not detected above the detection limit (DL) in either the field reagent blank or method blank. It is particularly notable that benzo(a)pyrene was not detected in the field duplicate sample. Associated results in the blank spike, surrogate standards, internal standards, ICAL, ICV, and CCV were within acceptance limits.

There is nothing in the (b) (4) data to suggest that either the identity or concentration were reported incorrectly in this sample, however, it is extremely unlikely that benzo(a)pyrene was present in this sample due to a petrogenic source. The preliminary evidence supporting this assertion includes:

- Non-detect results in both the diesel range organics (DRO) and oil range organics (ORO) of the SW-846 8015D total petroleum hydrocarbon (TPH) analysis;
- Non-detect results for all other polycyclic aromatic hydrocarbons (PAHs);
- Non-detect results for all PAHs in the field duplicate sample.

Benzo(a)pyrene is classified as a PAH, and PAHs from petrogenic sources are known to be less abundant relative to alkane hydrocarbons (alkane hydrocarbons would be detected in the TPH ranges.) Benzo(a)pyrene is almost never the most abundant PAH in any pyrogenic or petrogenic PAH pattern, so the ratios of the other parent (and alkylated) can provide valuable clues about the PAH source(s). A pyrogenic PAH pattern is almost always dominated by fluoranthene and pyrene, neither of which were detected. If benzo(a)pyrene was present in the sample due to a petroleum source, additional PAHs would also be expected to be present.

The ability to identify and quantitate individual DRO and ORO constituents is limited in the standard 8015D method used by (b) (4), and its detection limits for the other PAHs measured via method 525.2 are an order of magnitude greater than the detection limit for benzo(a)pyrene. Therefore, to provide further confidence in the assertions above related to the absence of other petroleum indicators, when the location was next sampled on December 4, 2024, the sample was sent to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D - Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons

Acetone and isopropyl alcohol were reported as tentatively identified compounds in the PIANO analysis at concentrations of 1.5 µg/L and 3.9 µg/L, respectively. These compounds are common laboratory

contaminants and are unrelated to any fuel. A single saturated hydrocarbon, n-octacosane, was reported at a concentration of 2.0 µg/L, but was also detected in the laboratory method blank at a similar concentration, indicating probable laboratory contamination. Furthermore, the detection of a single alkane would not be considered evidence of the presence of fuel. All PAH results were non-detect, confirming the lack of evidence for a petrogenic source of the original benzo(a) pyrene detection.

The most likely source of the benzo(a)pyrene is unidentified sporadic low-level contamination in the laboratory. There is no evidence of systematic contamination in the laboratory but given the presence of all target compounds in calibration standards and spiking solutions, the potential for incidental contamination exists, particularly at low levels. The detected concentration was less than twice the reporting limit (RL) of 0.02 µg/L, which is also the concentration of the lowest calibration standard.

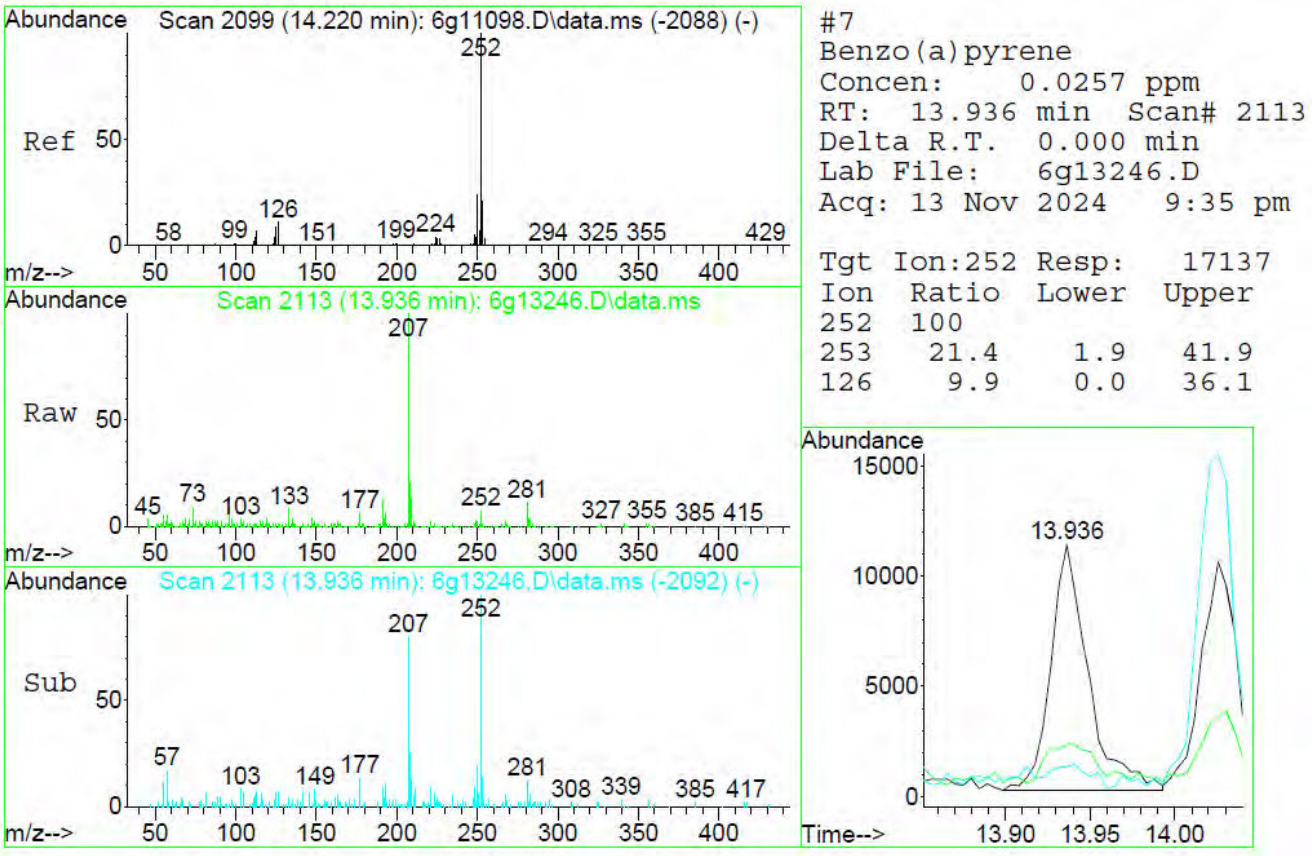
Sporadic low-level hits of benzo(a)pyrene have been detected in field blanks, method blanks, and samples throughout the extended drinking water monitoring (EDWM) program. The following table summarizes benzo(a)pyrene detections for samples collected from September through mid-December, 2024.

Sample Type	**Number**	**# ND**	**%ND**	**# <RL**	**% <RL**	**# >RL**	**% >RL**
Field Sample	1667	1634	98%	25	1.5%	8	0.5%
Field Reagent Blank	269	260	97%	7	2.6%	2	0.7%
Method Blank	120	118	98%	2	1.7%	0	0.0%

The fact that frequency of detections in field reagent blanks is the same or slightly greater than that in the field samples further supports the conclusion that benzo(a)pyrene was not present in the sample but was introduced in the laboratory.

It is notable that benzo(a)pyrene was not detected in the field duplicate collected at the same time. Furthermore, since CDCs were sampled quarterly during the Long Term Monitoring (LTM) program, and monthly during EDWM, this location has been sampled 15 times since May 4, 2022. Benzo(a)pyrene was not detected above the detection limit of 0.01 µg/L in 14 of these sampling events, further bolstering the argument that this was a sporadic detection unrelated to the site sample.

Figure 1. Mass Spectral Analysis of D3-TW-0015143-24306-N-2 (DA68507-14B)



#7
Benzo(a)pyrene
Concen: 0.0257 ppm
RT: 13.936 min Scan# 2113
Delta R.T. 0.000 min
Lab File: 6g13246.D
Acq: 13 Nov 2024 9:35 pm

Tgt Ion:252 Resp: 17137

Ion	Ratio	Lower	Upper
252	100		
253	21.4	1.9	41.9
126	9.9	0.0	36.1

Attachment 2: (b) (4) Laboratory Report L2471134

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2471134
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	EDWM
Project Number:	60729369
Report Date:	12/13/24

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

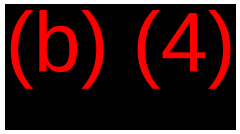
(b) (4)

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2471134-01	D3-TW-0015143-24336-N-2	WATER	HONOLULU, HI	12/04/24 09:08	12/06/24
L2471134-02	D3-TB-241204-24092-N	WATER	HONOLULU, HI	12/04/24 10:46	12/06/24



Project Name:	EDWM	**Lab Number:**	L2471134
Project Number:	60729369	**Report Date:**	12/13/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name: EDWM **Lab Number:** L2471134
Project Number: 60729369 **Report Date:** 12/13/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Saturated Hydrocarbons

The WG2006787-1 Method Blank, associated with L2471134-01, has concentrations below the reporting limits and "J" qualified. Additionally, the blank has concentrations above the reporting limit for n-Octacosane (C28); however, this compound is "C" qualified. Associated field sample results are "B" qualified if the concentrations are less than 10x the concentrations in the blank.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 12/13/24

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/10/24 04:58
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	81		70-130
4-Bromofluorobenzene	92		70-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-02
Client ID: D3-TB-241204-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 10:46
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/24 21:55
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-02
Client ID: D3-TB-241204-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 10:46
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

SAMPLE RESULTS

Lab ID: L2471134-02
Client ID: D3-TB-241204-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 10:46
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-02
Client ID: D3-TB-241204-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 10:46
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-02
Client ID: D3-TB-241204-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 10:46
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	5.42	J	ug/l			1
iso-Propyl Alcohol	3.94	NJ	ug/l			1
Acetone	1.48	NJ	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	91		70-130
Toluene-d8	77		70-130
4-Bromofluorobenzene	96		70-130

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/24 15:39
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2007290-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/24 15:39
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2007290-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/24 15:39
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2007290-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/24 15:39
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2007290-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/24 15:39
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2007290-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/24 15:39
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)		for sample(s):	01-02	Batch:	WG2007290-5
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	89		70-130
Toluene-d8	79		70-130
4-Bromofluorobenzene	100		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2007290-3 WG2007290-4								
1-Pentene	69		68		50-130	1		30
Pentane	69		69		50-130	0		30
Tertiary Butanol	75		79		50-130	5		30
Cyclopentane	75		75		50-130	0		30
2-Methylpentane	72		72		50-130	0		30
Methyl tert butyl ether	73		70		50-130	4		30
3-Methylpentane	74		72		50-130	3		30
1-Hexene	70		70		50-130	0		30
n-Hexane	66		68		50-130	3		30
Isopropyl Ether	72		79		50-130	9		30
Ethyl-Tert-Butyl-Ether	73		72		50-130	1		30
Methylcyclopentane	74		74		50-130	0		30
2,4-Dimethylpentane	73		72		50-130	1		30
Cyclohexane	76		76		50-130	0		30
2-Methylhexane	74		74		50-130	0		30
Benzene	83		84		50-130	1		30
2,3-Dimethylpentane	74		78		50-130	5		30
3-Methylhexane	71		72		50-130	1		30
Tertiary-Amyl Methyl Ether	66		66		50-130	0		30
Isooctane	74		76		50-130	3		30
Heptane	75		78		50-130	4		30
Methylcyclohexane	68		67		50-130	1		30
2-Methylheptane	74		76		50-130	3		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2007290-3 WG2007290-4								
3-Methylheptane	80		82		50-130	2		30
Toluene	84		85		50-130	1		30
Octane	78		80		50-130	3		30
Ethylbenzene	82		82		50-130	0		30
p/m-Xylene	90		89		50-130	1		30
Nonane (C9)	70		70		50-130	0		30
o-Xylene	88		88		50-130	0		30
Isopropylbenzene	92		90		50-130	2		30
n-Propylbenzene	91		90		50-130	1		30
1-Methyl-3-Ethylbenzene	90		88		50-130	2		30
1-Methyl-4-Ethylbenzene	97		95		50-130	2		30
1,3,5-Trimethylbenzene	91		92		50-130	1		30
1-Decene	69		72		50-130	4		30
1-Methyl-2-Ethylbenzene	94		92		50-130	2		30
Decane (C10)	81		83		50-130	2		30
1,2,4-Trimethylbenzene	88		88		50-130	0		30
sec-Butylbenzene	94		94		50-130	0		30
1-Methyl-4-N-Propylbenzene	84		84		50-130	0		30
n-Butylbenzene	92		92		50-130	0		30
1,2-Diethylbenzene	91		90		50-130	1		30
Undecane	84		83		50-130	1		30
N-Pentylbenzene	92		90		50-130	2		30
Dodecane (C12)	106		104		50-130	2		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2007290-3 WG2007290-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	82		82		70-130
Toluene-d8	78		79		70-130
4-Bromofluorobenzene	114		112		70-130

(b) (4)

SEMIVOLATILES

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/10/24 02:54
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.95	2.68	1
C1-Decalins	ND		ng/l	4.95	2.68	1
C2-Decalins	ND		ng/l	4.95	2.68	1
C3-Decalins	ND		ng/l	4.95	2.68	1
C4-Decalins	ND		ng/l	4.95	2.68	1
Naphthalene	ND		ng/l	9.90	2.71	1
C1-Naphthalenes	ND		ng/l	9.90	2.71	1
C2-Naphthalenes	ND		ng/l	9.90	2.71	1
C3-Naphthalenes	ND		ng/l	9.90	2.71	1
C4-Naphthalenes	ND		ng/l	9.90	2.71	1
2-Methylnaphthalene	ND		ng/l	9.90	6.56	1
1-Methylnaphthalene	ND		ng/l	9.90	4.29	1
Benzothiophene	ND		ng/l	9.90	2.55	1
C1-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C2-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C3-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C4-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
Biphenyl	ND		ng/l	9.90	2.11	1
2,6-Dimethylnaphthalene	ND		ng/l	9.90	3.02	1
Dibenzofuran	ND		ng/l	9.90	3.71	1
Acenaphthylene	ND		ng/l	9.90	5.18	1
Acenaphthene	ND		ng/l	9.90	3.61	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.90	1.90	1
Fluorene	ND		ng/l	9.90	4.21	1
C1-Fluorenes	ND		ng/l	9.90	4.21	1
C2-Fluorenes	ND		ng/l	9.90	4.21	1
C3-Fluorenes	ND		ng/l	9.90	4.21	1
Dibenzothiophene	ND		ng/l	9.90	3.31	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01 Date Collected: 12/04/24 09:08

Client ID: D3-TW-0015143-24336-N-2 Date Received: 12/06/24

Sample Location: HONOLULU, HI Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.90	3.31	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.90	3.31	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.90	3.31	1
C1-Dibenzothiophenes BS	ND		ng/l	9.90	3.31	1
C2-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C3-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C4-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
Phenanthrene	ND		ng/l	9.90	5.91	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.90	5.91	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.90	5.91	1
2-Methylanthracene (2MA)	ND		ng/l	9.90	5.91	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.90	5.91	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.90	5.91	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.90	5.91	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
Retene	ND		ng/l	9.90	5.99	1
Anthracene	ND		ng/l	9.90	3.40	1
Carbazole	ND		ng/l	9.90	5.37	1
Fluoranthene	ND		ng/l	9.90	6.62	1
Benzo(b)fluorene	ND		ng/l	9.90	4.60	1
7H-Benzo(c)fluorene	ND		ng/l	9.90	4.60	1
2-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
4-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
1-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
Pyrene	ND		ng/l	9.90	6.99	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C1-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C2-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C3-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C4-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
Benz(a)anthracene	ND		ng/l	9.90	5.97	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.90	7.02	1
C1-Chrysenes	ND		ng/l	9.90	7.02	1
C2-Chrysenes BS	ND		ng/l	9.90	7.02	1
C3-Chrysenes	ND		ng/l	9.90	7.02	1
C4-Chrysenes	ND		ng/l	9.90	7.02	1
Benzo(b)fluoranthene	ND		ng/l	9.90	7.17	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(a)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(e)pyrene	ND		ng/l	9.90	7.07	1
Benzo(a)pyrene	ND		ng/l	9.90	7.53	1
Perylene	ND		ng/l	9.90	4.55	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.90	9.50	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.90	6.42	1
Benzo(g,h,i)perylene	ND		ng/l	9.90	6.53	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	70		50-130
Phenanthrene-d10	76		50-130
Benzo(a)pyrene-d12	62		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2471134
Report Date: 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/09/24 22:45
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2006787-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/09/24 22:45
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2006787-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2471134
Report Date: 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/09/24 22:45
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2006787-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	79		50-130
Phenanthrene-d10	78		50-130
Benzo(a)pyrene-d12	85		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2006787-2 WG2006787-3								
Naphthalene	81		82		50-130	1		30
2-Methylnaphthalene	94		95		50-130	1		30
Acenaphthylene	96		96		50-130	0		30
Acenaphthene	95		95		50-130	0		30
Fluorene	98		98		50-130	0		30
Phenanthrene	97		97		50-130	0		30
Anthracene	100		101		50-130	1		30
Fluoranthene	81		81		50-130	0		30
Pyrene	90		91		50-130	1		30
Benz(a)anthracene	105		106		50-130	1		30
Chrysene/Triphenylene	97		98		50-130	1		30
Benzo(b)fluoranthene	95		95		50-130	0		30
Benzo(j)+(k)fluoranthene	101		101		50-130	0		30
Benzo(a)pyrene	105		105		50-130	0		30
Indeno(1,2,3-cd)pyrene	93		92		50-130	1		30
Dibenz(a,h)+(a,c)anthracene	90		90		50-130	0		30
Benzo(g,h,i)perylene	98		97		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2006787-2 WG2006787-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	93		92		50-130
Phenanthrene-d10	88		87		50-130
Benzo(a)pyrene-d12	96		95		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 12/10/24 16:41
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0005	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0005	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	0.002	CB	mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

SAMPLE RESULTS

Lab ID: L2471134-01
Client ID: D3-TW-0015143-24336-N-2
Sample Location: HONOLULU, HI

Date Collected: 12/04/24 09:08
Date Received: 12/06/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.027	1
Total Saturated Hydrocarbons	0.002	B	mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	76		50-130
d50-Tetracosane	75		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2471134
Report Date: 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/10/24 06:42
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2006787-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	0.001	JC	mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	0.001	C	mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2471134
Report Date: 12/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/10/24 06:42
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/09/24 11:33

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2006787-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	0.002	J	mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	81		50-130
d50-Tetracosane	80		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2471134
Report Date: 12/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01 Batch: WG2006787-2 WG2006787-3								
Nonane (C9)	73		68		50-130	7		30
n-Decane (C10)	80		74		50-130	8		30
n-Dodecane (C12)	79		77		50-130	3		30
n-Tetradecane (C14)	89		88		50-130	1		30
n-Hexadecane (C16)	95		96		50-130	1		30
n-Octadecane (C18)	97		98		50-130	1		30
n-Nonadecane (C19)	94		94		50-130	0		30
n-Eicosane (C20)	97		97		50-130	0		30
n-Docosane (C22)	93		94		50-130	1		30
n-Tetracosane (C24)	100		100		50-130	0		30
n-Hexacosane (C26)	93		94		50-130	1		30
n-Octacosane (C28)	92		93		50-130	1		30
n-Triacontane (C30)	93		93		50-130	0		30
n-Hexatriacontane (C36)	83		81		50-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	92		91		50-130
d50-Tetracosane	92		92		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Present/Intact

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2471134-01A	Vial Ascorbic Acid/HCl preserved	A	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2471134-01B	Vial Ascorbic Acid/HCl preserved	A	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2471134-01C	Vial Ascorbic Acid/HCl preserved	A	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2471134-01D	Amber 1L Na2S2O3	A	7	7	3.4	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2471134-01E	Amber 1L Na2S2O3	A	7	7	3.4	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2471134-02A	Vial Ascorbic Acid/HCl preserved	A	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2471134-02B	Vial Ascorbic Acid/HCl preserved	A	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2471134
Project Number:	60729369	**Report Date:**	12/13/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2471134
Project Number:	60729369	**Report Date:**	12/13/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name: EDWM **Lab Number:** L2471134

Project Number: 60729369 **Report Date:** 12/13/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

L2471139

C Team

Event: Monthly EDWM December 2024 Sampling

CHAIN OF CUSTODY PAGE 1 OF 1

Date Rec'd in Lab:

(b) (4) Job #:

(b) (4)

LP- 14

Project Information

Project Name: EDWM

Project Location: Honolulu, Hawaii

Project #: 60729369

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information: ☐ FAX ☐ ADEx

Data Deliverables: ☐ EMAIL ☐ Add'l Deliverables

Billing Information: ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits: State/Fed Program / Criteria

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database.

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☒ Lab to do

Preservation
☐ Lab to do
(Please specify below)

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	Sample Specific Comments	TOTAL # BOTTLES
71139-01	D3-TW-0015143-24336-N-2	12/4/24	0908	DW	(b) (6)	3	1	1		5

12/6/24

L247139

E

e Team

Event: Monthly EDWM December 2024 Sampling

(b) (4)

(b) (4)

CHAIN OF CUSTODY PAGE 1 OF 1

LP-15

Date Rec'd in Lab:

(b) (4) Job #:

Project Information

Report Information | Data Deliverables | Billing Information

☐ FAX ☐ EMAIL ☐ Same as Client Info PO #:

☐ ADEx ☐ Add'l Deliverables

Project Name: EDWM

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Project Location: Honolulu, Hawaii

Client Information

Client: (b) (6)

Project #: 60729369

Address: AECOM-1001 Bishop Street #1600

Project Manager: (b) (6)

Honolulu, HI 96813

(b) (4) Quote #:

Phone: (b) (6)

Turn-Around Time

Fax:

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database.

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	Total # Bottles
71134-02	D3-TB-241204-24092-N	12/4/24	1046	DW	(b) (6)	2	0	0	2

(b) (4), (b) (6)
DATE: 05DEC24
T: 50.00 LB MAN
0859493/CAFE3855
THIRD PARTY
FedEx
Express
FRI - 06 DEC 12:00P
PRIORITY OVERNIGHT
TRK# 0201 7444 9072 3730
02048
MA-US BOS
NE PYMA

CUSTODY SEAL
(b) (6)
Date: 12/4/2024
Initials

Appendix C. Tier 1 Analysis Tech Memos

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile – A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic – Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO – An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit - The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

May 14, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Naphthalene Detection Investigation Zone A3, 6069A Heron Avenue**

Attention CDR Dunn:

On Saturday, November 16, 2024, AECOM Technical Services, Inc. (AECOM) was notified that naphthalene was detected at a concentration of 1.3 micrograms per liter (µg/L) in sample A3-TW-0016239-24092-N, collected from the kitchen sink at the residence at 6069A Heron Avenue in Zone A3, on November 11, 2024. The sample was analyzed at (b) (4) , Colorado, via gas chromatography-mass spectrometry using United States Environmental Protection Agency (EPA) Method 525.2 and reported in sample delivery group DA68695. This concentration is above the laboratory's reporting limit (RL) of 0.50 µg/L. An investigation was initiated to determine if the reported detection is likely to be from a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **All evidence points to the conclusion that this naphthalene detection is not attributable to a petrogenic source and is unrelated to JP-5. Furthermore, it is likely that the detection is attributable to contamination at the sampling point due to the presence of mothballs, a known source of naphthalene.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control data
- Results of supplemental analyses
- Results from resampling

Naphthalene is a polycyclic aromatic hydrocarbon (PAH) that was designated in the revised Extended Drinking Water Monitoring (EDWM) Plan (October 2024) as a compound that is potentially associated with petroleum compounds and therefore must be evaluated when detected above the RL.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits and met the data quality objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. To further evaluate naphthalene, additional sample volume was sent to (b) (4) to analyze the sample for petroleum hydrocarbons and other potential fuel indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the EDWM Program. Specifically, when evaluating total petroleum hydrocarbon detections, the PIANO and SHC methods can identify and quantify individual hydrocarbon concentrations (with RLs of approximately 1 µg/L) rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAH and alkylated-PAH method, all at very low RLs, providing additional information that is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at separate laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. These additional analyses exceed industry standards and go beyond meeting the DQOs of EDWM.

Sample aliquots for the additional forensic analyses are collected at the time of the original sampling event and stored at (b) (4) on hold. Upon notification of the detection, AECOM immediately directed the laboratory to send additional sample volume from A3-TW-0016239-24092-N to (b) (4) for Tier 2 analyses. However, since the detection was reported on a Saturday, the sample could not be shipped until Monday, November 18, 2024, which was the last day of the holding time for the PAH and SHC analyses. Therefore, only the sample containers collected for PIANO analyses were shipped to (b) (4) for analysis. Naphthalene was detected in this sample at a concentration of 2.32 µg/L, providing confirmation of the (b) (4) result.

The resident was contacted to schedule resampling and asked that resampling be postponed until the spring of 2025. AECOM returned to the residence on April 8, 2025, to recollect a sample from the kitchen sink, and to collect samples from the hallway bathroom and master bathroom sinks. Upon entering the house, the sampling team noted a mothball-like odor. Upon further investigation, mothballs were discovered under the water heater next to the kitchen sink, and the resident indicated that mothballs had also been used elsewhere in the kitchen though no other mothballs were found during AECOM's inspection. Samples were sent to (b) (4) for EPA Method 525.2 analysis and to (b) (4) for PIANO and PAH analyses.

Naphthalene was not detected above the detection limit (DL) in any of the samples analyzed via EPA Method 525.2 (DL = 0.25 µg/L) or PIANO (DL = 0.835 µg/L). However, naphthalene was detected in the samples from all locations via the (b) (4) laboratory PAH analysis with detections of 0.0793 µg/L in the kitchen sink, 0.00903 µg/L in the hallway sink, and 0.00855 µg/L in the master bathroom sink. The DL for naphthalene via the (b) (4) laboratory PAH analysis is 0.00267 µg/L.

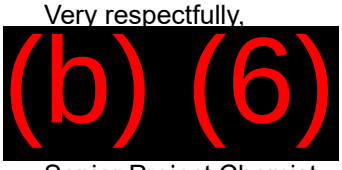
Conclusion

After examining multiple lines of evidence, AECOM concludes that the naphthalene detections did not originate from JP-5 or other petroleum compounds. Mothballs present in the residence are the most likely source of the naphthalene detected in the sample. No additional action is currently recommended.

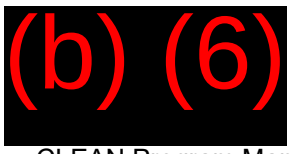
A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory reports from (b) (4) are provided in Attachment 2 and Attachment 3. Attachment 4 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6).

Very respectfully,



Senior Project Chemist
(b) (6)



CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Technical Discussion of Sample A3-TW-0016239-24092-N

Attachment 2: (b) (4) Laboratory Report L2467667

Attachment 3: (b) (4) Laboratory Report L2521789

Attachment 4: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Attachment 1: Technical Discussion of Sample A3-TW-0016239-24092-N

Appendix C. Tier 1 Analysis Tech Memos

The chromatogram and mass spectrum for A3-TW-0016239-24092-N were reviewed to verify that naphthalene was correctly identified. The retention time and ion ratios met all criteria indicating that the peak was correctly identified as naphthalene. The mass spectrum obtained by (b) (4) via United States Environmental Protection Agency (EPA) Method 525.2 is presented as Figure 1.

All associated laboratory quality control data were reviewed for evidence of laboratory contamination or other method performance issues that may have led to a false positive result. Items reviewed included:

- Method blank results
- Blank spike recoveries
- Surrogate standard recoveries
- Internal standard recoveries
- Initial calibration (ICAL) curve
- Initial calibration verification (ICV)
- Continuing calibration verification (CCV)

Naphthalene was not detected above the detection limit (DL) in the method blank. Associated results in the blank spike, surrogate standards, internal standards, ICAL, ICV, and CCV were within acceptance limits.

There is nothing in the (b) (4) data to suggest that either the identity or concentration were reported incorrectly in this sample; however, it is extremely unlikely that the naphthalene detection originated from a petrogenic source. The preliminary evidence supporting this assertion includes:

- Non-detect results in both the diesel range organics (DRO) and oil range organics (ORO) of the SW-846 8015D total petroleum hydrocarbon (TPH) analysis.
- Non-detect results for all other polycyclic aromatic hydrocarbons (PAHs).

Naphthalene is classified as a PAH, and PAHs from petrogenic sources are known to be less abundant relative to alkane hydrocarbons, meaning that alkane hydrocarbon detections would be expected in the TPH ranges. In addition, if naphthalene was present in the sample due to a petroleum source, additional PAHs would also be expected to be present.

The ability to identify and quantify individual DRO and ORO constituents is limited in the standard 8015D method used by (b) (4). In addition, the use of methods with lower individual hydrocarbon and PAH DLs than those obtained via the (b) (4) methods is useful to support the absence of other petroleum indicators. Therefore, AECOM Technical Services, Inc (AECOM) protocol is to send the sample to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260D - Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs (PAPAH)
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

In this instance, the sample could not be shipped from (b) (4) until Monday, November 18, 2024, which was the last day of the preparation holding time for the PAPAH and SHC analyses. Therefore, only the sample containers collected for PIANO analyses were shipped to (b) (4) for analysis. Naphthalene was detected in this sample at a concentration of 2.32 µg/L, providing confirmation of the (b) (4) result. The mass spectrum obtained by (b) (4) via 8260D PIANO analysis is presented as Figure 2.

Figure 1. Mass Spectral Analysis of - A3-TW-0016239-24092-N (Method 525.2)

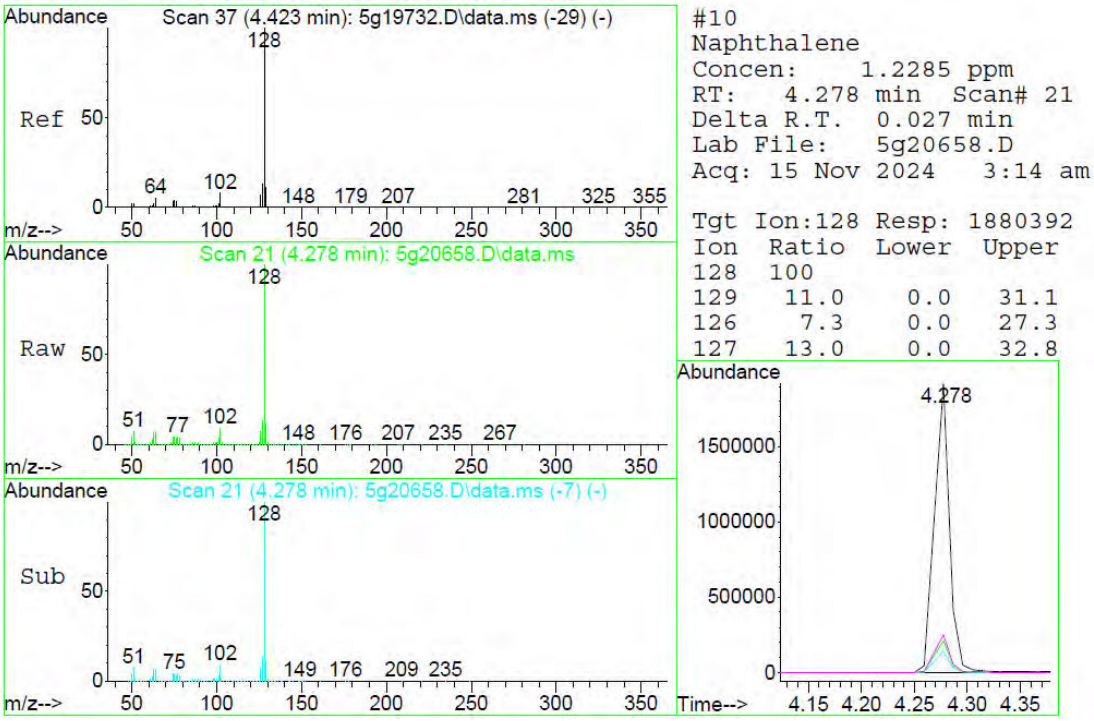
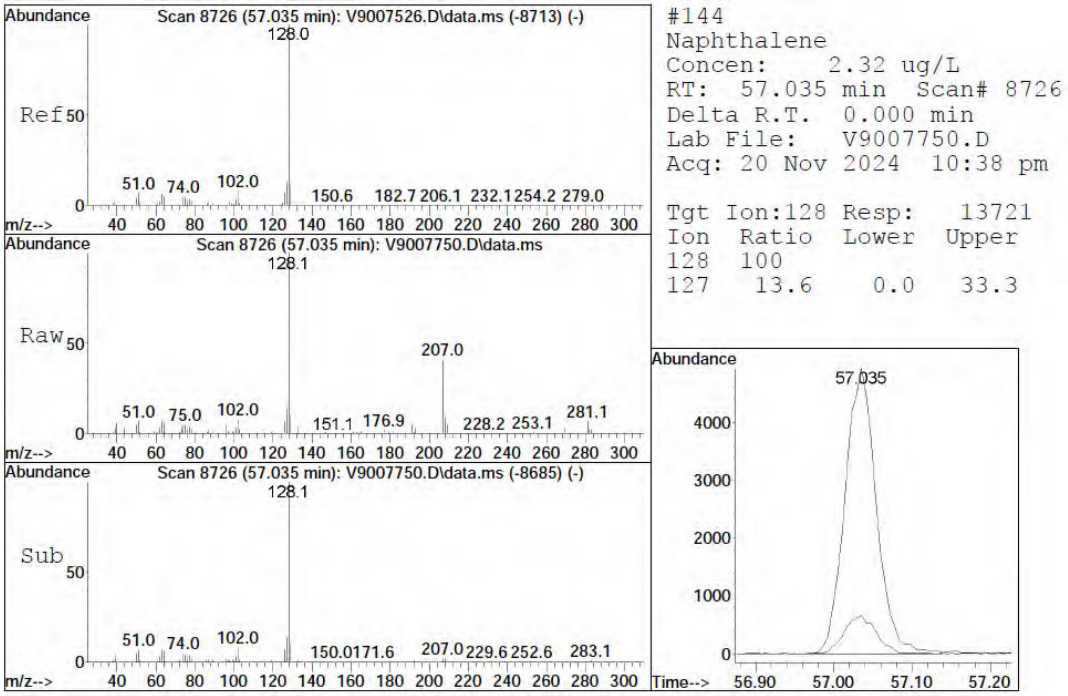


Figure 2. Mass Spectral Analysis of - A3-TW-0016239-24092-N (Method 8260D PIANO)



To determine if the naphthalene detection was reproducible, and to further investigate the possibility of a petrogenic source, AECOM returned to the residence on April 8, 2025, to recollect a sample from the kitchen sink, and to collect samples from the hallway bathroom and master bathroom sinks.

Upon entering the house, the sampling team noted a mothball-like odor. Upon further investigation, mothballs were discovered under the water heater next to the kitchen sink, and the resident indicated that mothballs had also been used elsewhere in the kitchen though no residual was observed in the other location. The resident did not provide information as to how long mothballs had been in use.

Figure 3 and Figure 4 present photographs taken of the water heater showing several small mothball pellets underneath. Naphthalene is the main ingredient of mothballs and is a potential source of the naphthalene found in the residence samples.

Figure 3

Figure 4

The samples were sent to (b) (4) for Method 525.2 analysis and to (b) (4) for PIANO and PAPAH analyses.

Naphthalene was not detected above the DL in any of the April 2025 samples analyzed via EPA Method 525.2 or 8260D PIANO. However, naphthalene was detected in the samples from all locations via the 8270E-SIM PAPAH. Naphthalene results for all samples and by all analytical methods are tabulated below.

Sample ID	Location	Sample Date	Analytical Method	Result	DL	RL	Units
A3-TW-0016239-24092-N	Kitchen Sink	11/11/2024	525.2	1.3	0.26	0.52	µg/L
A3-TW-0016239-24092-N	Kitchen Sink	11/11/2024	8260D	2.32	0.835	2.00	µg/L
A3-TW-0016239-24092-N-R1	Kitchen Sink	4/8/2025	525.2	ND	0.24	0.48	µg/L
A3-TW-0016239-24092-N-R1	Kitchen Sink	4/8/2025	8260D	ND	0.835	2.00	µg/L
A3-TW-0016239-24092-N-R1	Kitchen Sink	4/8/2025	8270E-SIM	0.0793	0.00267	0.00976	µg/L
A3-TW-0016239-24092-N-1	Hallway Sink	4/8/2025	525.2	ND	0.24	0.48	µg/L
A3-TW-0016239-24092-N-1	Hallway Sink	4/8/2025	8260D	ND	0.835	2.00	µg/L

Sample ID	Location	Sample Date	Analytical Method	Result	DL	RL	Units
A3-TW-0016239-24092-N-1	Hallway Sink	4/8/2025	8270E-SIM	0.00903 J	0.00269	0.00980	µg/L
A3-TW-0016239-24092-N-2	Master Bedroom Sink	4/8/2025	525.2	ND	0.24	0.48	µg/L
A3-TW-0016239-24092-N-2	Master Bedroom Sink	4/8/2025	8260D	ND	0.835	2.00	µg/L
A3-TW-0016239-24092-N-2	Master Bedroom Sink	4/8/2025	8270E-SIM	0.00855 J	0.00267	0.00976	µg/L

µg/L = micrograms per liter (1 µg/L equals 1000 ng/L)
DL = detection limit
J = Result is between the DL and RL and should be considered estimated
ND = Not detected above the DL
RL = reporting limit

These results appear to confirm the presence of naphthalene in the residence. The concentration is significantly lower in the April 2025 samples than in those collected in November 2024. It is surmised that the mothballs are giving off less naphthalene over time as they slowly disappear due to sublimation. It is also noted that the concentration is highest in the kitchen sink which is adjacent to location where the mothballs were observed. The hallway and master bedroom sinks are located farther away from the mothballs, the presumed source of naphthalene.

Based on multiple lines of evidence, AECOM concludes that naphthalene was present in the water collected from the residence at 6069A Heron Avenue, and that the source is not petrogenic, but is due to the use of mothballs in the residence. No further action is recommended at this time.

Attachment 2: (b) (4) Laboratory Report L2467667

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2467667
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	CTO24F0139
Project Number:	60729369
Report Date:	11/25/24

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369

Lab Number: L2467667
Report Date: 11/25/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2467667-01	A3-TW-0016239-24092-N	WATER	HONOLULU, HI	11/11/24 08:40	11/19/24

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2467667
Project Number:	60729369	**Report Date:**	11/25/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2467667
Project Number:	60729369	**Report Date:**	11/25/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6) [redacted]

Title: Technical Director/Representative Date: 11/25/24

(b) (4) [redacted]

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

SAMPLE RESULTS

Lab ID: L2467667-01
Client ID: A3-TW-0016239-24092-N
Sample Location: HONOLULU, HI

Date Collected: 11/11/24 08:40
Date Received: 11/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/20/24 22:38
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	0.789	J	ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

SAMPLE RESULTS

Lab ID: L2467667-01
Client ID: A3-TW-0016239-24092-N
Sample Location: HONOLULU, HI

Date Collected: 11/11/24 08:40
Date Received: 11/19/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

SAMPLE RESULTS

Lab ID: L2467667-01
Client ID: A3-TW-0016239-24092-N
Sample Location: HONOLULU, HI

Date Collected: 11/11/24 08:40
Date Received: 11/19/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

SAMPLE RESULTS

Lab ID: L2467667-01
Client ID: A3-TW-0016239-24092-N
Sample Location: HONOLULU, HI

Date Collected: 11/11/24 08:40
Date Received: 11/19/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	2.32		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

SAMPLE RESULTS

Lab ID: L2467667-01
Client ID: A3-TW-0016239-24092-N
Sample Location: HONOLULU, HI

Date Collected: 11/11/24 08:40
Date Received: 11/19/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	100		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	97		70-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/19/24 17:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2000706-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/19/24 17:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2000706-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/19/24 17:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2000706-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/19/24 17:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2000706-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/19/24 17:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2000706-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/19/24 17:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)		for sample(s):	01	Batch:	WG2000706-5

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND		ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	98		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	95		70-130

(b) (4)

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369

Lab Number: L2467667

Report Date: 11/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2000706-3 WG2000706-4								
1-Pentene	72		72		50-130	0		30
Pentane	73		74		50-130	1		30
Tertiary Butanol	111		113		50-130	2		30
Cyclopentane	81		80		50-130	1		30
2-Methylpentane	86		85		50-130	1		30
Methyl tert butyl ether	96		94		50-130	2		30
3-Methylpentane	90		89		50-130	1		30
1-Hexene	89		90		50-130	1		30
n-Hexane	84		85		50-130	1		30
Isopropyl Ether	95		97		50-130	2		30
Ethyl-Tert-Butyl-Ether	92		92		50-130	0		30
Methylcyclopentane	88		90		50-130	2		30
2,4-Dimethylpentane	92		93		50-130	1		30
Cyclohexane	89		88		50-130	1		30
2-Methylhexane	94		94		50-130	0		30
Benzene	96		96		50-130	0		30
2,3-Dimethylpentane	97		96		50-130	1		30
3-Methylhexane	90		88		50-130	2		30
Tertiary-Amyl Methyl Ether	85		82		50-130	4		30
Isooctane	91		91		50-130	0		30
Heptane	94		93		50-130	1		30
Methylcyclohexane	87		86		50-130	1		30
2-Methylheptane	91		90		50-130	1		30

(b) (4)

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369

Lab Number: L2467667

Report Date: 11/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2000706-3 WG2000706-4								
3-Methylheptane	94		94		50-130	0		30
Toluene	94		93		50-130	1		30
Octane	92		94		50-130	2		30
Ethylbenzene	88		88		50-130	0		30
p/m-Xylene	94		94		50-130	0		30
Nonane (C9)	80		80		50-130	0		30
o-Xylene	93		93		50-130	0		30
Isopropylbenzene	94		94		50-130	0		30
n-Propylbenzene	92		92		50-130	0		30
1-Methyl-3-Ethylbenzene	91		92		50-130	1		30
1-Methyl-4-Ethylbenzene	97		96		50-130	1		30
1,3,5-Trimethylbenzene	93		94		50-130	1		30
1-Decene	78		76		50-130	3		30
1-Methyl-2-Ethylbenzene	92		94		50-130	2		30
Decane (C10)	94		93		50-130	1		30
1,2,4-Trimethylbenzene	90		90		50-130	0		30
sec-Butylbenzene	94		95		50-130	1		30
1-Methyl-4-N-Propylbenzene	84		84		50-130	0		30
n-Butylbenzene	90		90		50-130	0		30
1,2-Diethylbenzene	90		92		50-130	2		30
Undecane	90		88		50-130	2		30
N-Pentylbenzene	89		92		50-130	3		30
Dodecane (C12)	108		108		50-130	0		30

(b) (4)

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369

Lab Number: L2467667

Report Date: 11/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2000706-3 WG2000706-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	90		91		70-130
Toluene-d8	90		90		70-130
4-Bromofluorobenzene	103		104		70-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Present/Intact

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2467667-01A	Vial HCl preserved	A	NA		5.8	Y	Present/Intact		A2-PIANO8260(14)
L2467667-01B	Vial HCl preserved	A	NA		5.8	Y	Present/Intact		A2-PIANO8260(14)
L2467667-01C	Vial HCl preserved	A	NA		5.8	Y	Present/Intact		A2-PIANO8260(14)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2467667
Project Number:	60729369	**Report Date:**	11/25/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: CTO24F0139 **Lab Number:** L2467667

Project Number: 60729369 **Report Date:** 11/25/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine, 2,6-Dichlorophenol.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4) **:**

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4) **:**

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your (b) (4) Project Manager.

(b) (4) (b) (4)

CHAIN OF CUSTODY

PAGE OF

(b) (4)

Project Information

Project Name: CTO24F0139

Project Location: Honolulu, HI

Project #: 60729369.00.46.01

Project Manager (b) (6)

(b) (4) Quote #:

Client Information

Client: AECOM

Address: 1001 Bishop Street #1600

Honolulu, HI 96813

Phone (b) (6)

Fax:

Email: (b) (6)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

☐ These samples have been Previously analyzed by (b) (4)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

EDMS DB: JBPHH Drinking Water LTM; Event: EDWM A3 Residential; Zone: A3

☐ MS/MSD (at unit cost) will be omitted unless you check here

Date Rec'd in Lab: 11/19/24

(b) (4) Job #: L2467667

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☒ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 1677061

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 SIM Parent and Alkylated PAHs	8015 Sat Hydrocarbons	8260 PIANO + TICs	SAMPLE HANDLING Filtration ☐ Done ☐ Not Needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)	TOTAL # BOTTLES	Sample Specific Comments
67667-01	A3-TW-0016239-24092-N	11/11/24	08:40	DW		☐	☐	☒			

Container Type

Preservative

(b) (6)

Relinquished by: Date/Time: 11/18/24 1400

Received by: (b) (6) Date/Time: 11/19/24 10:27

Relinquished by: Date/Time: 11/19/24 10:27

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alphas Payment Terms.

FORM NO: 101-00(-AK) (rev. 5-JAN-12)

(b) (4), (b) (6)
(b) (4)
(b) (6)
SHIP DATE: 18NOV24
ACTWGT: 15.50 LB MAN
CAD: 0053493/CAFE3055
BILL SENDER
FedEx
Express
TUE - 19 NOV 10:30A
PRIORITY OVERNIGHT
TRK# 7444 9072 0042
NE PYMA
02048
MA-US BOS

Attachment 3: (b) (4) Laboratory Report L2521789

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2521789
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	PEM
Project Number:	60729369
Report Date:	04/28/25

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

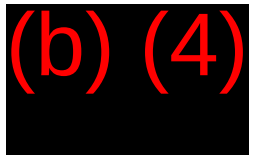
(b) (4)

(b) (4)

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2521789-01	A3-TW-0016239-24092-N-2	WATER	HONOLULU, HI	04/08/25 12:05	04/10/25
L2521789-02	A3-TW-0016239-24092-N-1	WATER	HONOLULU, HI	04/08/25 11:44	04/10/25
L2521789-03	A3-TW-0016239-24092-N-R1	WATER	HONOLULU, HI	04/08/25 11:27	04/10/25
L2521789-04	A3-TB-250408-24092-N	WATER	HONOLULU, HI	04/08/25 11:00	04/10/25



Project Name:	PEM	**Lab Number:**	L2521789
Project Number:	60729369	**Report Date:**	04/28/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name: PEM **Lab Number:** L2521789
Project Number: 60729369 **Report Date:** 04/28/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Saturated Hydrocarbons

The WG2053692-2/-3 LCS/LCSD recoveries associated with L2521789-01 through -03 were outside the acceptance criteria for individual target compounds; however, the criteria were achieved upon re-extraction outside of holding time. The results of the original extraction are reported and a PDF of the re-extraction results is included in the data package. All results are considered to have a potentially low bias for nonane (c9) (25%/36%) and decane (c10) (33%/49%).

The WG2053692-2/-3 LCS/LCSD RPD(s) associated with L2521789-01 through -03 are above the acceptance criteria for nonane (c9) (36%) and decane (c10) (39%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6) [redacted]

Title: Technical Director/Representative Date: 04/28/25

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/14/25 18:47
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	5.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	14.7	J	ug/l			1
Unknown	14.7	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	114		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	94		70-130

(b) (4)

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/14/25 19:56
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	5.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: PEM

Lab Number: L2521789

Project Number: 60729369

Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	13.7	J	ug/l			1
Unknown	13.7	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	111		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	95		70-130

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/14/25 21:05
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	5.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: PEM

Lab Number: L2521789

Project Number: 60729369

Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	14.4	J	ug/l			1
Unknown	14.4	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	94		70-130

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-04
Client ID: A3-TB-250408-24092-N
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:00
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/14/25 22:14
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	5.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-04
Client ID: A3-TB-250408-24092-N
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:00
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

SAMPLE RESULTS

Lab ID: L2521789-04
Client ID: A3-TB-250408-24092-N
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:00
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

SAMPLE RESULTS

Lab ID: L2521789-04
Client ID: A3-TB-250408-24092-N
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:00
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-04 | Date Collected: 04/08/25 11:00

Client ID: A3-TB-250408-24092-N | Date Received: 04/10/25

Sample Location: HONOLULU, HI | Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	27.7	J	ug/l			1
Unknown	27.7	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	94		70-130

(b) (4)

Project Name: PEM **Lab Number:** L2521789

Project Number: 60729369 **Report Date:** 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/14/25 17:12
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2054071-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	5.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: PEM **Lab Number:** L2521789

Project Number: 60729369 **Report Date:** 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/14/25 17:12
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2054071-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/14/25 17:12
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2054071-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/14/25 17:12
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2054071-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/14/25 17:12
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2054071-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/14/25 17:12
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2054071-5					
Tentatively Identified Compounds					
Total TIC Compounds	24.7	J	ug/l		
Unknown	24.7	J	ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	108		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	96		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-04 Batch: WG2054071-3 WG2054071-4								
1-Pentene	83		76		50-130	9		30
Pentane	82		74		50-130	10		30
Tertiary Butanol	94		110		50-130	16		30
Cyclopentane	85		81		50-130	5		30
2-Methylpentane	91		82		50-130	10		30
Methyl tert butyl ether	96		97		50-130	1		30
3-Methylpentane	94		84		50-130	11		30
1-Hexene	96		85		50-130	12		30
n-Hexane	91		82		50-130	10		30
Isopropyl Ether	102		99		50-130	3		30
Ethyl-Tert-Butyl-Ether	98		96		50-130	2		30
Methylcyclopentane	94		82		50-130	14		30
2,4-Dimethylpentane	96		86		50-130	11		30
Cyclohexane	94		84		50-130	11		30
2-Methylhexane	94		86		50-130	9		30
Benzene	96		90		50-130	6		30
2,3-Dimethylpentane	98		90		50-130	9		30
3-Methylhexane	92		82		50-130	11		30
Tertiary-Amyl Methyl Ether	92		92		50-130	0		30
Isooctane	96		87		50-130	10		30
Heptane	98		90		50-130	9		30
Methylcyclohexane	96		86		50-130	11		30
2-Methylheptane	92		87		50-130	6		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-04 Batch: WG2054071-3 WG2054071-4								
3-Methylheptane	94		88		50-130	7		30
Toluene	95		92		50-130	3		30
Octane	94		91		50-130	3		30
Ethylbenzene	93		92		50-130	1		30
p/m-Xylene	95		98		50-130	3		30
Nonane (C9)	89		89		50-130	0		30
o-Xylene	96		100		50-130	4		30
Isopropylbenzene	94		94		50-130	0		30
n-Propylbenzene	95		98		50-130	3		30
1-Methyl-3-Ethylbenzene	94		98		50-130	4		30
1-Methyl-4-Ethylbenzene	97		103		50-130	6		30
1,3,5-Trimethylbenzene	94		100		50-130	6		30
1-Decene	74		71		50-130	4		30
1-Methyl-2-Ethylbenzene	94		100		50-130	6		30
Decane (C10)	97		92		50-130	5		30
1,2,4-Trimethylbenzene	94		99		50-130	5		30
sec-Butylbenzene	98		102		50-130	4		30
1-Methyl-4-N-Propylbenzene	92		95		50-130	3		30
n-Butylbenzene	98		102		50-130	4		30
1,2-Diethylbenzene	100		106		50-130	6		30
Undecane	107		101		50-130	6		30
N-Pentylbenzene	100		98		50-130	2		30
Dodecane (C12)	124		125		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-04 Batch: WG2054071-3 WG2054071-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	99		95		70-130
Toluene-d8	100		97		70-130
4-Bromofluorobenzene	98		102		70-130

(b) (4)

SEMIVOLATILES

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 04/17/25 23:39
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.88	2.64	1
C1-Decalins	ND		ng/l	4.88	2.64	1
C2-Decalins	ND		ng/l	4.88	2.64	1
C3-Decalins	ND		ng/l	4.88	2.64	1
C4-Decalins	ND		ng/l	4.88	2.64	1
Naphthalene	8.55	J	ng/l	9.76	2.67	1
C1-Naphthalenes	ND		ng/l	9.76	2.67	1
C2-Naphthalenes	ND		ng/l	9.76	2.67	1
C3-Naphthalenes	ND		ng/l	9.76	2.67	1
C4-Naphthalenes	ND		ng/l	9.76	2.67	1
2-Methylnaphthalene	ND		ng/l	9.76	6.47	1
1-Methylnaphthalene	ND		ng/l	9.76	4.22	1
Benzothiophene	ND		ng/l	9.76	2.52	1
C1-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C2-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C3-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C4-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
Biphenyl	ND		ng/l	9.76	2.08	1
2,6-Dimethylnaphthalene	ND		ng/l	9.76	2.98	1
Dibenzofuran	ND		ng/l	9.76	3.66	1
Acenaphthylene	ND		ng/l	9.76	5.10	1
Acenaphthene	ND		ng/l	9.76	3.56	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.76	1.87	1
Fluorene	ND		ng/l	9.76	4.15	1
C1-Fluorenes	ND		ng/l	9.76	4.15	1
C2-Fluorenes	ND		ng/l	9.76	4.15	1
C3-Fluorenes	ND		ng/l	9.76	4.15	1
Dibenzothiophene	ND		ng/l	9.76	3.26	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.76	3.26	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.76	3.26	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.76	3.26	1
C1-Dibenzothiophenes BS	ND		ng/l	9.76	3.26	1
C2-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
C3-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
C4-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
Phenanthrene	ND		ng/l	9.76	5.82	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.76	5.82	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.76	5.82	1
2-Methylanthracene (2MA)	ND		ng/l	9.76	5.82	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.76	5.82	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.76	5.82	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.76	5.82	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
Retene	ND		ng/l	9.76	5.90	1
Anthracene	ND		ng/l	9.76	3.36	1
Carbazole	ND		ng/l	9.76	5.29	1
Fluoranthene	ND		ng/l	9.76	6.53	1
Benzo(b)fluorene	ND		ng/l	9.76	4.54	1
7H-Benzo(c)fluorene	ND		ng/l	9.76	4.54	1
2-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
4-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
1-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
Pyrene	ND		ng/l	9.76	6.89	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C1-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C2-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C3-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C4-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
Benz(a)anthracene	ND		ng/l	9.76	5.88	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.76	6.92	1
C1-Chrysenes	ND		ng/l	9.76	6.92	1
C2-Chrysenes BS	ND		ng/l	9.76	6.92	1
C3-Chrysenes	ND		ng/l	9.76	6.92	1
C4-Chrysenes	ND		ng/l	9.76	6.92	1
Benzo(b)fluoranthene	ND		ng/l	9.76	7.06	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.76	6.30	1
Benzo(a)fluoranthene	ND		ng/l	9.76	6.30	1
Benzo(e)pyrene	ND		ng/l	9.76	6.96	1
Benzo(a)pyrene	ND		ng/l	9.76	7.42	1
Perylene	ND		ng/l	9.76	4.49	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.76	9.36	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.76	6.33	1
Benzo(g,h,i)perylene	ND		ng/l	9.76	6.44	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	70		50-130
Phenanthrene-d10	96		50-130
Benzo(a)pyrene-d12	85		50-130

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 04/18/25 01:03
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.90	2.66	1
C1-Decalins	ND		ng/l	4.90	2.66	1
C2-Decalins	ND		ng/l	4.90	2.66	1
C3-Decalins	ND		ng/l	4.90	2.66	1
C4-Decalins	ND		ng/l	4.90	2.66	1
Naphthalene	9.03	J	ng/l	9.80	2.69	1
C1-Naphthalenes	ND		ng/l	9.80	2.69	1
C2-Naphthalenes	ND		ng/l	9.80	2.69	1
C3-Naphthalenes	ND		ng/l	9.80	2.69	1
C4-Naphthalenes	ND		ng/l	9.80	2.69	1
2-Methylnaphthalene	ND		ng/l	9.80	6.50	1
1-Methylnaphthalene	ND		ng/l	9.80	4.24	1
Benzothiophene	ND		ng/l	9.80	2.53	1
C1-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C2-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C3-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C4-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
Biphenyl	ND		ng/l	9.80	2.09	1
2,6-Dimethylnaphthalene	ND		ng/l	9.80	2.99	1
Dibenzofuran	ND		ng/l	9.80	3.68	1
Acenaphthylene	ND		ng/l	9.80	5.13	1
Acenaphthene	ND		ng/l	9.80	3.58	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.80	1.88	1
Fluorene	ND		ng/l	9.80	4.17	1
C1-Fluorenes	ND		ng/l	9.80	4.17	1
C2-Fluorenes	ND		ng/l	9.80	4.17	1
C3-Fluorenes	ND		ng/l	9.80	4.17	1
Dibenzothiophene	ND		ng/l	9.80	3.27	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.80	3.27	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.80	3.27	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.80	3.27	1
C1-Dibenzothiophenes BS	ND		ng/l	9.80	3.27	1
C2-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C3-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C4-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
Phenanthrene	ND		ng/l	9.80	5.85	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.80	5.85	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.80	5.85	1
2-Methylanthracene (2MA)	ND		ng/l	9.80	5.85	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.80	5.85	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.80	5.85	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.80	5.85	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
Retene	ND		ng/l	9.80	5.93	1
Anthracene	ND		ng/l	9.80	3.37	1
Carbazole	ND		ng/l	9.80	5.31	1
Fluoranthene	ND		ng/l	9.80	6.56	1
Benzo(b)fluorene	ND		ng/l	9.80	4.56	1
7H-Benzo(c)fluorene	ND		ng/l	9.80	4.56	1
2-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
4-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
1-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
Pyrene	ND		ng/l	9.80	6.92	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C1-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C2-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C3-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C4-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
Benz(a)anthracene	ND		ng/l	9.80	5.91	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.80	6.95	1
C1-Chrysenes	ND		ng/l	9.80	6.95	1
C2-Chrysenes BS	ND		ng/l	9.80	6.95	1
C3-Chrysenes	ND		ng/l	9.80	6.95	1
C4-Chrysenes	ND		ng/l	9.80	6.95	1
Benzo(b)fluoranthene	ND		ng/l	9.80	7.10	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(a)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(e)pyrene	ND		ng/l	9.80	7.00	1
Benzo(a)pyrene	ND		ng/l	9.80	7.46	1
Perylene	ND		ng/l	9.80	4.51	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.80	9.41	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.80	6.36	1
Benzo(g,h,i)perylene	ND		ng/l	9.80	6.47	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	64		50-130
Phenanthrene-d10	90		50-130
Benzo(a)pyrene-d12	83		50-130

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 04/18/25 02:27
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.88	2.64	1
C1-Decalins	ND		ng/l	4.88	2.64	1
C2-Decalins	ND		ng/l	4.88	2.64	1
C3-Decalins	ND		ng/l	4.88	2.64	1
C4-Decalins	ND		ng/l	4.88	2.64	1
Naphthalene	79.3		ng/l	9.76	2.67	1
C1-Naphthalenes	ND		ng/l	9.76	2.67	1
C2-Naphthalenes	ND		ng/l	9.76	2.67	1
C3-Naphthalenes	ND		ng/l	9.76	2.67	1
C4-Naphthalenes	ND		ng/l	9.76	2.67	1
2-Methylnaphthalene	ND		ng/l	9.76	6.47	1
1-Methylnaphthalene	ND		ng/l	9.76	4.22	1
Benzothiophene	ND		ng/l	9.76	2.52	1
C1-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C2-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C3-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C4-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
Biphenyl	ND		ng/l	9.76	2.08	1
2,6-Dimethylnaphthalene	ND		ng/l	9.76	2.98	1
Dibenzofuran	ND		ng/l	9.76	3.66	1
Acenaphthylene	ND		ng/l	9.76	5.10	1
Acenaphthene	ND		ng/l	9.76	3.56	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.76	1.87	1
Fluorene	ND		ng/l	9.76	4.15	1
C1-Fluorenes	ND		ng/l	9.76	4.15	1
C2-Fluorenes	ND		ng/l	9.76	4.15	1
C3-Fluorenes	ND		ng/l	9.76	4.15	1
Dibenzothiophene	ND		ng/l	9.76	3.26	1

(b) (4)

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.76	3.26	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.76	3.26	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.76	3.26	1
C1-Dibenzothiophenes BS	ND		ng/l	9.76	3.26	1
C2-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
C3-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
C4-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
Phenanthrene	ND		ng/l	9.76	5.82	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.76	5.82	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.76	5.82	1
2-Methylanthracene (2MA)	ND		ng/l	9.76	5.82	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.76	5.82	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.76	5.82	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.76	5.82	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
Retene	ND		ng/l	9.76	5.90	1
Anthracene	ND		ng/l	9.76	3.36	1
Carbazole	ND		ng/l	9.76	5.29	1
Fluoranthene	ND		ng/l	9.76	6.53	1
Benzo(b)fluorene	ND		ng/l	9.76	4.54	1
7H-Benzo(c)fluorene	ND		ng/l	9.76	4.54	1
2-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
4-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
1-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
Pyrene	ND		ng/l	9.76	6.89	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C1-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C2-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C3-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C4-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
Benz(a)anthracene	ND		ng/l	9.76	5.88	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.76	6.92	1
C1-Chrysenes	ND		ng/l	9.76	6.92	1
C2-Chrysenes BS	ND		ng/l	9.76	6.92	1
C3-Chrysenes	ND		ng/l	9.76	6.92	1
C4-Chrysenes	ND		ng/l	9.76	6.92	1
Benzo(b)fluoranthene	ND		ng/l	9.76	7.06	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.76	6.30	1
Benzo(a)fluoranthene	ND		ng/l	9.76	6.30	1
Benzo(e)pyrene	ND		ng/l	9.76	6.96	1
Benzo(a)pyrene	ND		ng/l	9.76	7.42	1
Perylene	ND		ng/l	9.76	4.49	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.76	9.36	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.76	6.33	1
Benzo(g,h,i)perylene	ND		ng/l	9.76	6.44	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	73		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	90		50-130

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 04/17/25 19:26
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01-03 Batch: WG2053692-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: PEM **Lab Number:** L2521789

Project Number: 60729369 **Report Date:** 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 04/17/25 19:26
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01-03 Batch: WG2053692-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 04/17/25 19:26
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01-03 Batch: WG2053692-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	69		50-130
Phenanthrene-d10	95		50-130
Benzo(a)pyrene-d12	87		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

PAHs - (b) (4) Associated sample(s): 01-03 Batch: WG2053692-2 WG2053692-3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Naphthalene	80		83		50-130	4		30
2-Methylnaphthalene	72		73		50-130	1		30
Acenaphthylene	75		76		50-130	1		30
Acenaphthene	80		81		50-130	1		30
Fluorene	85		87		50-130	2		30
Phenanthrene	86		89		50-130	3		30
Anthracene	94		98		50-130	4		30
Fluoranthene	73		76		50-130	4		30
Pyrene	80		84		50-130	5		30
Benz(a)anthracene	93		97		50-130	4		30
Chrysene/Triphenylene	90		93		50-130	3		30
Benzo(b)fluoranthene	91		94		50-130	3		30
Benzo(j)+(k)fluoranthene	89		92		50-130	3		30
Benzo(a)pyrene	88		91		50-130	3		30
Indeno(1,2,3-cd)pyrene	92		92		50-130	0		30
Dibenz(a,h)+(a,c)anthracene	89		92		50-130	3		30
Benzo(g,h,i)perylene	88		90		50-130	2		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4)	Associated sample(s): 01-03 Batch: WG2053692-2 WG2053692-3							

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	74		74		50-130
Phenanthrene-d10	90		88		50-130
Benzo(a)pyrene-d12	80		80		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 04/24/25 04:27
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.000976	0.000483	1
n-Decane (C10)	ND		mg/l	0.000976	0.000491	1
n-Undecane (C11)	ND		mg/l	0.000976	0.000445	1
n-Dodecane (C12)	ND		mg/l	0.000976	0.000541	1
n-Tridecane (C13)	ND		mg/l	0.00488	0.000444	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.000976	0.000420	1
n-Tetradecane (C14)	ND		mg/l	0.000976	0.000420	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.000976	0.000354	1
n-Pentadecane (C15)	ND		mg/l	0.000976	0.000354	1
n-Hexadecane (C16)	ND		mg/l	0.000976	0.000275	1
Norpristane (1650)	ND		mg/l	0.000976	0.000234	1
n-Heptadecane (C17)	ND		mg/l	0.000976	0.000248	1
Pristane	ND		mg/l	0.000976	0.000234	1
n-Octadecane (C18)	ND		mg/l	0.000976	0.000905	1
Phytane	ND		mg/l	0.000976	0.000178	1
n-Nonadecane (C19)	ND		mg/l	0.000976	0.000216	1
n-Eicosane (C20)	ND		mg/l	0.000976	0.000157	1
n-Heneicosane (C21)	ND		mg/l	0.000976	0.000157	1
n-Docosane (C22)	ND		mg/l	0.000976	0.000166	1
n-Tricosane (C23)	ND		mg/l	0.000976	0.000187	1
n-Tetracosane (C24)	ND		mg/l	0.000976	0.000273	1
n-Pentacosane (C25)	0.000767	JC	mg/l	0.00488	0.000670	1
n-Hexacosane (C26)	ND		mg/l	0.000976	0.000336	1
n-Heptacosane (C27)	ND		mg/l	0.000976	0.000360	1
n-Octacosane (C28)	ND		mg/l	0.000976	0.000780	1
n-Nonacosane (C29)	ND		mg/l	0.000976	0.000962	1
n-Triacontane (C30)	ND		mg/l	0.000976	0.000199	1
n-Hentriacontane (C31)	ND		mg/l	0.000976	0.000354	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-01
Client ID: A3-TW-0016239-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 12:05
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.000976	0.000198	1
n-Tritriacontane (C33)	ND		mg/l	0.000976	0.000203	1
n-Tetratriacontane (C34)	ND		mg/l	0.000976	0.000191	1
n-Pentatriacontane (C35)	ND		mg/l	0.000976	0.000209	1
n-Hexatriacontane (C36)	ND		mg/l	0.000976	0.000215	1
n-Heptatriacontane (C37)	ND		mg/l	0.000976	0.000228	1
n-Octatriacontane (C38)	ND		mg/l	0.000976	0.000401	1
n-Nonatriacontane (C39)	ND		mg/l	0.000976	0.000207	1
n-Tetracontane (C40)	ND		mg/l	0.000976	0.000207	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.0322	0.0270	1
Total Saturated Hydrocarbons	0.000767	JB	mg/l	0.000976	0.000157	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	77		50-130
d50-Tetracosane	84		50-130

(b) (4)

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 04/26/25 01:16
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.000980	0.000485	1
n-Decane (C10)	ND		mg/l	0.000980	0.000493	1
n-Undecane (C11)	ND		mg/l	0.000980	0.000447	1
n-Dodecane (C12)	ND		mg/l	0.000980	0.000544	1
n-Tridecane (C13)	ND		mg/l	0.00490	0.000446	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.000980	0.000422	1
n-Tetradecane (C14)	ND		mg/l	0.000980	0.000422	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.000980	0.000356	1
n-Pentadecane (C15)	ND		mg/l	0.000980	0.000356	1
n-Hexadecane (C16)	ND		mg/l	0.000980	0.000276	1
Norpristane (1650)	ND		mg/l	0.000980	0.000235	1
n-Heptadecane (C17)	ND		mg/l	0.000980	0.000249	1
Pristane	ND		mg/l	0.000980	0.000235	1
n-Octadecane (C18)	ND		mg/l	0.000980	0.000910	1
Phytane	ND		mg/l	0.000980	0.000179	1
n-Nonadecane (C19)	ND		mg/l	0.000980	0.000217	1
n-Eicosane (C20)	ND		mg/l	0.000980	0.000158	1
n-Heneicosane (C21)	ND		mg/l	0.000980	0.000158	1
n-Docosane (C22)	ND		mg/l	0.000980	0.000167	1
n-Tricosane (C23)	ND		mg/l	0.000980	0.000188	1
n-Tetracosane (C24)	0.000394	J	mg/l	0.000980	0.000274	1
n-Pentacosane (C25)	0.00105	JC	mg/l	0.00490	0.000674	1
n-Hexacosane (C26)	0.000574	J	mg/l	0.000980	0.000338	1
n-Heptacosane (C27)	0.000544	J	mg/l	0.000980	0.000362	1
n-Octacosane (C28)	ND		mg/l	0.000980	0.000784	1
n-Nonacosane (C29)	ND		mg/l	0.000980	0.000967	1
n-Triacontane (C30)	0.000278	J	mg/l	0.000980	0.000200	1
n-Hentriacontane (C31)	ND		mg/l	0.000980	0.000356	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-02
Client ID: A3-TW-0016239-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:44
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.000980	0.000199	1
n-Tritriacontane (C33)	ND		mg/l	0.000980	0.000204	1
n-Tetratriacontane (C34)	ND		mg/l	0.000980	0.000192	1
n-Pentatriacontane (C35)	ND		mg/l	0.000980	0.000210	1
n-Hexatriacontane (C36)	ND		mg/l	0.000980	0.000216	1
n-Heptatriacontane (C37)	ND		mg/l	0.000980	0.000229	1
n-Octatriacontane (C38)	ND		mg/l	0.000980	0.000403	1
n-Nonatriacontane (C39)	ND		mg/l	0.000980	0.000208	1
n-Tetracontane (C40)	ND		mg/l	0.000980	0.000208	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.0324	0.0272	1
Total Saturated Hydrocarbons	0.00284	JB	mg/l	0.000980	0.000158	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	76		50-130
d50-Tetracosane	80		50-130

(b) (4)

Project Name: PEM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2521789
Report Date: 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03
Client ID: A3-TW-0016239-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 04/08/25 11:27
Date Received: 04/10/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 04/24/25 07:15
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.000976	0.000483	1
n-Decane (C10)	ND		mg/l	0.000976	0.000491	1
n-Undecane (C11)	ND		mg/l	0.000976	0.000445	1
n-Dodecane (C12)	ND		mg/l	0.000976	0.000541	1
n-Tridecane (C13)	ND		mg/l	0.00488	0.000444	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.000976	0.000420	1
n-Tetradecane (C14)	ND		mg/l	0.000976	0.000420	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.000976	0.000354	1
n-Pentadecane (C15)	ND		mg/l	0.000976	0.000354	1
n-Hexadecane (C16)	ND		mg/l	0.000976	0.000275	1
Norpristane (1650)	ND		mg/l	0.000976	0.000234	1
n-Heptadecane (C17)	ND		mg/l	0.000976	0.000248	1
Pristane	ND		mg/l	0.000976	0.000234	1
n-Octadecane (C18)	ND		mg/l	0.000976	0.000905	1
Phytane	ND		mg/l	0.000976	0.000178	1
n-Nonadecane (C19)	ND		mg/l	0.000976	0.000216	1
n-Eicosane (C20)	ND		mg/l	0.000976	0.000157	1
n-Heneicosane (C21)	ND		mg/l	0.000976	0.000157	1
n-Docosane (C22)	ND		mg/l	0.000976	0.000166	1
n-Tricosane (C23)	ND		mg/l	0.000976	0.000187	1
n-Tetracosane (C24)	ND		mg/l	0.000976	0.000273	1
n-Pentacosane (C25)	0.000776	JC	mg/l	0.00488	0.000670	1
n-Hexacosane (C26)	ND		mg/l	0.000976	0.000336	1
n-Heptacosane (C27)	ND		mg/l	0.000976	0.000360	1
n-Octacosane (C28)	ND		mg/l	0.000976	0.000780	1
n-Nonacosane (C29)	ND		mg/l	0.000976	0.000962	1
n-Triacontane (C30)	ND		mg/l	0.000976	0.000199	1
n-Hentriacontane (C31)	ND		mg/l	0.000976	0.000354	1

(b) (4)

Project Name: PEM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2521789

Project Number: 60729369 | **Report Date:** 04/28/25

SAMPLE RESULTS

Lab ID: L2521789-03 | Date Collected: 04/08/25 11:27

Client ID: A3-TW-0016239-24092-N-R1 | Date Received: 04/10/25

Sample Location: HONOLULU, HI | Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.000976	0.000198	1
n-Tritriacontane (C33)	ND		mg/l	0.000976	0.000203	1
n-Tetratriacontane (C34)	ND		mg/l	0.000976	0.000191	1
n-Pentatriacontane (C35)	ND		mg/l	0.000976	0.000209	1
n-Hexatriacontane (C36)	ND		mg/l	0.000976	0.000215	1
n-Heptatriacontane (C37)	ND		mg/l	0.000976	0.000228	1
n-Octatriacontane (C38)	ND		mg/l	0.000976	0.000401	1
n-Nonatriacontane (C39)	ND		mg/l	0.000976	0.000207	1
n-Tetracontane (C40)	ND		mg/l	0.000976	0.000207	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.0322	0.0270	1
Total Saturated Hydrocarbons	0.000776	JB	mg/l	0.000976	0.000157	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	81		50-130
d50-Tetracosane	89		50-130

(b) (4)

Project Name: PEM **Lab Number:** L2521789

Project Number: 60729369 **Report Date:** 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 04/25/25 19:41
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01-03 Batch: WG2053692-1					
n-Nonane (C9)	ND		mg/l	0.00100	0.000495
n-Decane (C10)	ND		mg/l	0.00100	0.000503
n-Undecane (C11)	ND		mg/l	0.00100	0.000456
n-Dodecane (C12)	ND		mg/l	0.00100	0.000555
n-Tridecane (C13)	ND		mg/l	0.00500	0.000455
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.00100	0.000430
n-Tetradecane (C14)	ND		mg/l	0.00100	0.000430
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.00100	0.000363
n-Pentadecane (C15)	ND		mg/l	0.00100	0.000363
n-Hexadecane (C16)	ND		mg/l	0.00100	0.000282
Norpristane (1650)	ND		mg/l	0.00100	0.000240
n-Heptadecane (C17)	ND		mg/l	0.00100	0.000254
Pristane	ND		mg/l	0.00100	0.000240
n-Octadecane (C18)	ND		mg/l	0.00100	0.000928
Phytane	ND		mg/l	0.00100	0.000183
n-Nonadecane (C19)	ND		mg/l	0.00100	0.000221
n-Eicosane (C20)	ND		mg/l	0.00100	0.000161
n-Heneicosane (C21)	ND		mg/l	0.00100	0.000161
n-Docosane (C22)	ND		mg/l	0.00100	0.000170
n-Tricosane (C23)	ND		mg/l	0.00100	0.000192
n-Tetracosane (C24)	0.000334	J	mg/l	0.00100	0.000280
n-Pentacosane (C25)	0.00103	JC	mg/l	0.00500	0.000687
n-Hexacosane (C26)	0.000527	J	mg/l	0.00100	0.000345
n-Heptacosane (C27)	0.000629	J	mg/l	0.00100	0.000369
n-Octacosane (C28)	ND		mg/l	0.00100	0.000800
n-Nonacosane (C29)	ND		mg/l	0.00100	0.000986
n-Triacontane (C30)	0.000288	J	mg/l	0.00100	0.000204
n-Hentriacontane (C31)	ND		mg/l	0.00100	0.000363
n-Dotriacontane (C32)	ND		mg/l	0.00100	0.000203

(b) (4)

Project Name: PEM
Project Number: 60729369
Lab Number: L2521789
Report Date: 04/28/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 04/25/25 19:41
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 04/14/25 18:30

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01-03 Batch: WG2053692-1					
n-Tritriacontane (C33)	ND		mg/l	0.00100	0.000208
n-Tetratriacontane (C34)	ND		mg/l	0.00100	0.000196
n-Pentatriacontane (C35)	ND		mg/l	0.00100	0.000214
n-Hexatriacontane (C36)	ND		mg/l	0.00100	0.000220
n-Heptatriacontane (C37)	ND		mg/l	0.00100	0.000234
n-Octatriacontane (C38)	ND		mg/l	0.00100	0.000411
n-Nonatriacontane (C39)	ND		mg/l	0.00100	0.000212
n-Tetracontane (C40)	ND		mg/l	0.00100	0.000212
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.0330	0.0277
Total Saturated Hydrocarbons	0.00281	J	mg/l	0.00100	0.000161

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	53		50-130
d50-Tetracosane	57		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01-03 Batch: WG2053692-2 WG2053692-3								
Nonane (C9)	**25**	Q	**36**	Q	50-130	**36**	Q	30
n-Decane (C10)	**33**	Q	**49**	Q	50-130	**39**	Q	30
n-Dodecane (C12)	54		62		50-130	14		30
n-Tetradecane (C14)	71		76		50-130	7		30
n-Hexadecane (C16)	80		83		50-130	4		30
n-Octadecane (C18)	85		88		50-130	3		30
n-Nonadecane (C19)	84		87		50-130	4		30
n-Eicosane (C20)	86		89		50-130	3		30
n-Docosane (C22)	86		88		50-130	2		30
n-Tetracosane (C24)	90		93		50-130	3		30
n-Hexacosane (C26)	86		90		50-130	5		30
n-Octacosane (C28)	87		90		50-130	3		30
n-Triacontane (C30)	88		92		50-130	4		30
n-Hexatriacontane (C36)	83		87		50-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	76		76		50-130
d50-Tetracosane	85		86		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Present/Intact
B	Present/Intact

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2521789-01A	Vial Ascorbic Acid/HCl preserved	A	NA		3.8	Y	Present/Intact		A2-PIANO8260(14)
L2521789-01B	Vial Ascorbic Acid/HCl preserved	A	NA		3.8	Y	Present/Intact		A2-PIANO8260(14)
L2521789-01C	Vial Ascorbic Acid/HCl preserved	A	NA		3.8	Y	Present/Intact		A2-PIANO8260(14)
L2521789-01D	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-01E	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-01F	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-01G	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-02A	Vial Ascorbic Acid/HCl preserved	A	NA		3.8	Y	Present/Intact		A2-PIANO8260(14)
L2521789-02B	Vial Ascorbic Acid/HCl preserved	A	NA		3.8	Y	Present/Intact		A2-PIANO8260(14)
L2521789-02C	Vial Ascorbic Acid/HCl preserved	A	NA		3.8	Y	Present/Intact		A2-PIANO8260(14)
L2521789-02D	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-02E	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-02F	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-02G	Amber 1L Na2S2O3	A	7	7	3.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-03A	Vial Ascorbic Acid/HCl preserved	B	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2521789-03B	Vial Ascorbic Acid/HCl preserved	B	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2521789-03C	Vial Ascorbic Acid/HCl preserved	B	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)
L2521789-03D	Amber 1L Na2S2O3	B	7	7	3.4	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-03E	Amber 1L Na2S2O3	B	7	7	3.4	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-03F	Amber 1L Na2S2O3	B	7	7	3.4	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-03G	Amber 1L Na2S2O3	B	7	7	3.4	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2521789-04A	Vial Ascorbic Acid/HCl preserved	B	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: PEM
Project Number: 60729369

Lab Number: L2521789
Report Date: 04/28/25

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2521789-04B	Vial Ascorbic Acid/HCl preserved	B	NA		3.4	Y	Present/Intact		A2-PIANO8260(14)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: PEM **Lab Number:** L2521789

Project Number: 60729369 **Report Date:** 04/28/25

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	PEM	**Lab Number:**	L2521789
Project Number:	60729369	**Report Date:**	04/28/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	PEM	**Lab Number:**	L2521789
Project Number:	60729369	**Report Date:**	04/28/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name: PEM **Lab Number:** L2521789

Project Number: 60729369 **Report Date:** 04/28/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

(b) (4)
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

(b) (4)
(b) (4)

(b) (4)
(b) (4)

(b) (4)
(b) (4)

For a complete listing of analytes and methods, please contact your Project Manager.

4/10/26 L2521789

A Team

Event: EDWM A3 Zone Residential Sampling

(b) (4)

CHAIN OF CUSTODY PAGE 1 OF 1

SALP-08

Project Information

Project Name: PEM

Project Location: Honolulu, Hawaii

Project # 60729369

Project Manager: (b) (6)

(b) (4) Quote #:

Date Rec'd in Lab:

(b) (4) b #:

Report Information: ☐ FAX ☐ ADEx

Data Deliverables: ☐ EMAIL ☐ Add'l Deliverables

Billing Information: ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

☐ These samples have been Previously analyzed by: (b) (4)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☒ Lab to do

Preservation
☐ Lab to do
(Please specify below)

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons -	Sample Specific Comments	TOTAL # BOTTLES
-01	A3-TW-0016239-24092-N-2	4/8/25	1205	DW	(b) (6)	3	2	2		7
Container Type						V	A	A		
Preservative						E/	H	H		

Relinquished By: (b) (6) Date/Time: 4/8/25 1346 | 4/9/25 0830 | 4/10/25 14:08

Received By: (b) (6) Date/Time: 4/8/25 1546 | 4/10/25 1428

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Pace's Payment Terms.

4/10/25 12521789

A Team

Event: EDWM A3 Zone Residential Sampling

CHAIN OF CUSTODY

PAGE 1 OF 1

(b) (4) ALP-09 ALP-

(b) (4)

(b) (4) Job #:

Project Information

Project Name: PEM

Project Location: Honolulu, Hawaii

Project #: 60729369

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information | **Data Deliverables** | **Billing Information**

☐ FAX ☐ ADEx | ☐ EMAIL ☐ Add'l Deliverables | ☐ Same as Client info | PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons -	SAMPLE HANDLING	TOTAL # BOTTLES
02	A3-TW-0016239-24092-N-1	4/8/25	1144	DW	(b) (6)	3	2	2	Sample Specific Comments	7

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☒ Lab to do

Preservation
☐ Lab to do
(Please specify below)

Container Type	V	A	A
Preservative	5,I	H	H

Relinquished By	Date/Time	Relinquished By	Date/Time
(b) (6)	1346 4/8/25	(b) (6)	1346 9/8/25
	4/9/25 0830		
	4/10/25 1428		10/25 1428

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Eurofins's Payment Terms.

4/10/25 L2521789

A Team

Event: EDWM A3 Zone Residential Sampling

CHAIN OF CUSTODY PAGE 1 OF 1

(b) (4) ALP-05 ~~EP-05~~ 4/9/25

(b) (4)

Date Rec'd in Lab: (b) (4) Job #:

Project Information

Project Name: PEM

Project Location: Honolulu, Hawaii

Project #: 60729389

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information ☐ FAX ☐ ADEx

Data Deliverables ☐ EMAIL ☐ Add'l Deliverables

Billing Information ☐ Same as Client info PO #

Regulatory Requirements/Report Limits State/Fed Program: Criteria:

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database.

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons -	TOTAL # BOTTLES
-03	A3-TW-0016239-24092-N-R1	4/8/25	1127	DW	(b) (6)	3	2	2	7
-04	A3-TB-250408-24092-N	4/8/25	1100	DW		2			2
	(b) (6) 4/9/25								
Container Type						V	A	A	
Preservative						3,I	H	H	

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☒ Lab to do

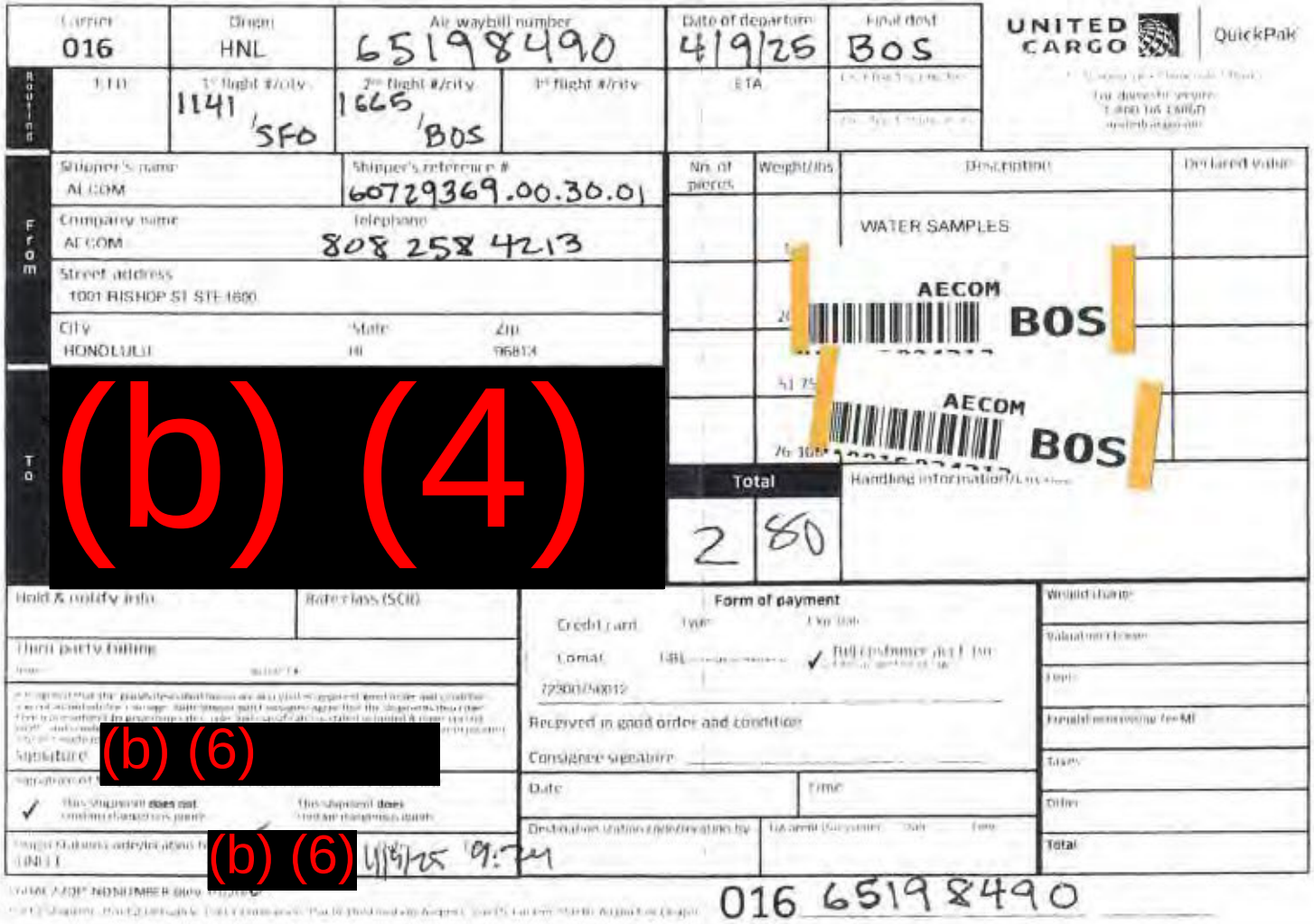
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Relinquished By	Date/Time	Relinquished By	Date/Time
(b) (6)	4/8/25 1346	(b) (6)	1346
	4/9/25 0934		
	4/10/25 14:08		4/10/25 14:08

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

* Sample ID at 1100 = A3-TB-250408-24092-N LW 4/9/2025



Carrier: 016
Origin: HNL
Air waybill number: 65198490
Date of departure: 4/9/25
Final dest: BOS
UNITED CARGO | QuickPak

Routing
ETD
1st flight #/city: 1141 / SFO
2nd flight #/city: 1665 / BOS
3rd flight #/city
ETA

From
Shipper's name: AECOM
Shipper's reference #: 60729369.00.30.01
Company name: AECOM
Telephone: 808 258 4213
Street address: 1001 BISHOP ST STE 1600
City: HONOLULU
State: HI
Zip: 96813

To
(b) (4)

No. of pieces	Weight/lbs	Description	Declared value
		WATER SAMPLES	
Total 2	80	Handling information/Customs	

AECOM BOS
AECOM BOS

Hold & notify info
Rate class (SCR)
Third party billing
Signature
(b) (6)
This shipment does not contain dangerous goods
This shipment does contain dangerous goods
(b) (6) 4/8/25 9:24

Form of payment
Credit card
Comat
Bill customer acct no.
Received in good order and condition
Consignee signature
Date
Time
Destination station/delivery date by
Weight charge
Valuation charge
Taxes
Other
Total

016 65198490

Attachment 4: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile – A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic – Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO – An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit (RL) – The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

March 3, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Benzo(a)pyrene Detection Investigation Zone J1, 3771 Elm Drive**

Attention CDR Dunn:

On Friday, December 6, 2024, AECOM Technical Services, Inc. was notified of a benzo(a)pyrene detection of 0.034 micrograms per liter (µg/L) in sample J1-TW-0018183-24092-N, collected from the kitchen sink in the residence at 3771 Elm Drive in Zone J1, on November 26, 2024. The sample was analyzed at (b) (4) , via gas chromatography-mass spectrometry using United States Environmental Protection Agency (EPA) Method 525.2 and reported in sample delivery group (SDG) DA69068. This result is above the laboratory's reporting limit (RL) of 0.02 µg/L.

AECOM launched an investigation to determine if the reported detection is likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **AECOM concludes that based on multiple lines of evidence, this benzo(a)pyrene detection is not attributable to a petrogenic source and is unrelated to JP-5. Furthermore, it is likely that the benzo(a)pyrene found is due to some minor contamination in the laboratory, which is not unusual at very low concentrations. AECOM concludes that benzo(a)pyrene was not present in the field sample.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control (QC) data
- Results of supplemental sampling and analysis (resampled December 11, 2024)

Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that we designated in the revised Extended Drinking Water Monitoring Plan (October 2024) as a compound that is potentially associated with petroleum compounds, and therefore, must be evaluated when detected above the reporting limit.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits (MDLs) and met the data quality objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. One part of evaluating Benzo(a)pyrene is to send an additional sample to (b) (4) They measure the amount of petroleum hydrocarbons and other potential indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the Extended Drinking Water Monitoring program. Specifically, when evaluating Total Petroleum Hydrocarbon (TPH) detections, the PIANO and SHC methods can identify and quantitate individual hydrocarbon (with RLs of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. This additional analysis performed exceeds industry standards and goes beyond meeting the DQOs of EDWM.

Additional sample volume was not available for the Tier 2 analyses from the November 26, 2024, sampling event; therefore, AECOM returned to the residence on December 11, 2024, and sampled all five sinks for analysis by EPA Method 525.2 (reported in (b) (4) SDG DA69369), and the kitchen sink was also sampled for Tier 2 analyses ((b) (4) SDG L2472820). **There were no detections of benzo(a)pyrene or other PAHs in any of these samples. Furthermore, there were no detections of any kind in the Tier 2 analyses of the kitchen sink.**

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water in the residence at 3771 Elm Drive does not contain benzo(a)pyrene nor any other petroleum compounds. The original detection of benzo(a)pyrene is most likely due to a laboratory artifact. AECOM is working with the laboratory to try to identify the mechanism by which the contaminant may have been introduced to the sample and will continue to do so. No additional action is currently recommended.

A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory report from (b) (4) is provided in Attachment 2. Attachment 3 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6).

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Technical Discussion of Sample J1-TW-0018183-24092-N

Attachment 2: (b) (4) Laboratory Report L2472820

Attachment 3: Glossary of Terms

Attachment 1: Technical Discussion of Sample J1-TW-0018183-24092-N

Appendix C. Tier 1 Analysis Tech Memos

Attachment 1: *Technical Review of Sample J1-TW-0018183-24092-N*

The chromatogram and mass spectrum for J1-TW-0018183-24092-N were reviewed to verify that benzo(a)pyrene was correctly identified. The retention time and ion ratios met all criteria indicating that the peak was correctly identified as benzo(a)pyrene. The mass spectrum is presented as Figure 1.

All associated field and laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have led to a false positive result. Items reviewed included:

- Field reagent blank results
- Method blank results
- Blank spike recoveries
- Surrogate standard recoveries
- Internal standard recoveries
- Initial calibration (ICAL) curve
- Initial calibration verification (ICV)
- Continuing calibration verification (CCV)

Benzo(a)pyrene was not detected above the detection limit (DL) in either the field reagent blank or method blank. Associated results in the blank spike, surrogate standards, internal standards, ICAL, and ICV were within acceptance limits. The CCV recovery for benzo(a)pyrene was 137% which is above the acceptance limits of 70-130%, indicating the possibility of a positive bias, but this minor exceedance would not significantly affect the reported result.

There is nothing in the (b) (4) data to suggest that either the identity or concentration were reported incorrectly in this sample, however, it is extremely unlikely that benzo(a)pyrene was present in this sample due to a petrogenic source. The preliminary evidence supporting this assertion includes:

- Non-detect results in both the diesel range organics (DRO) and oil range organics (ORO) of the SW-846 8015D total petroleum hydrocarbon (TPH) analysis; and
- Non-detect results for all other polycyclic aromatic hydrocarbons (PAHs).

Benzo(a)pyrene is classified as a PAH, and PAHs from petrogenic sources are known to be less abundant relative to alkane hydrocarbons (alkane hydrocarbons would be detected in the TPH ranges.) Benzo(a)pyrene is almost never the most abundant PAH in any pyrogenic or petrogenic PAH pattern, so the ratios of the other parent (and alkylated) can provide valuable clues about the PAH source(s). A pyrogenic PAH pattern is almost always dominated by fluoranthene and pyrene, neither of which were detected. If benzo(a)pyrene was present in the sample due to a petroleum source, additional PAHs would also be expected to be present.

The ability to identify and quantitate individual DRO and ORO constituents is limited in the standard 8015D method used by (b) (4), and its detection limits for the other PAHs measured via method 525.2 are an order of magnitude greater than the detection limit for benzo(a)pyrene. Therefore, to provide further confidence in the assertions above related to the absence of other petroleum indicators, the sample was recollected and sent to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D - Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons

All results were non-detect in all three analyses, confirming the lack of evidence for a petrogenic source of the detection.

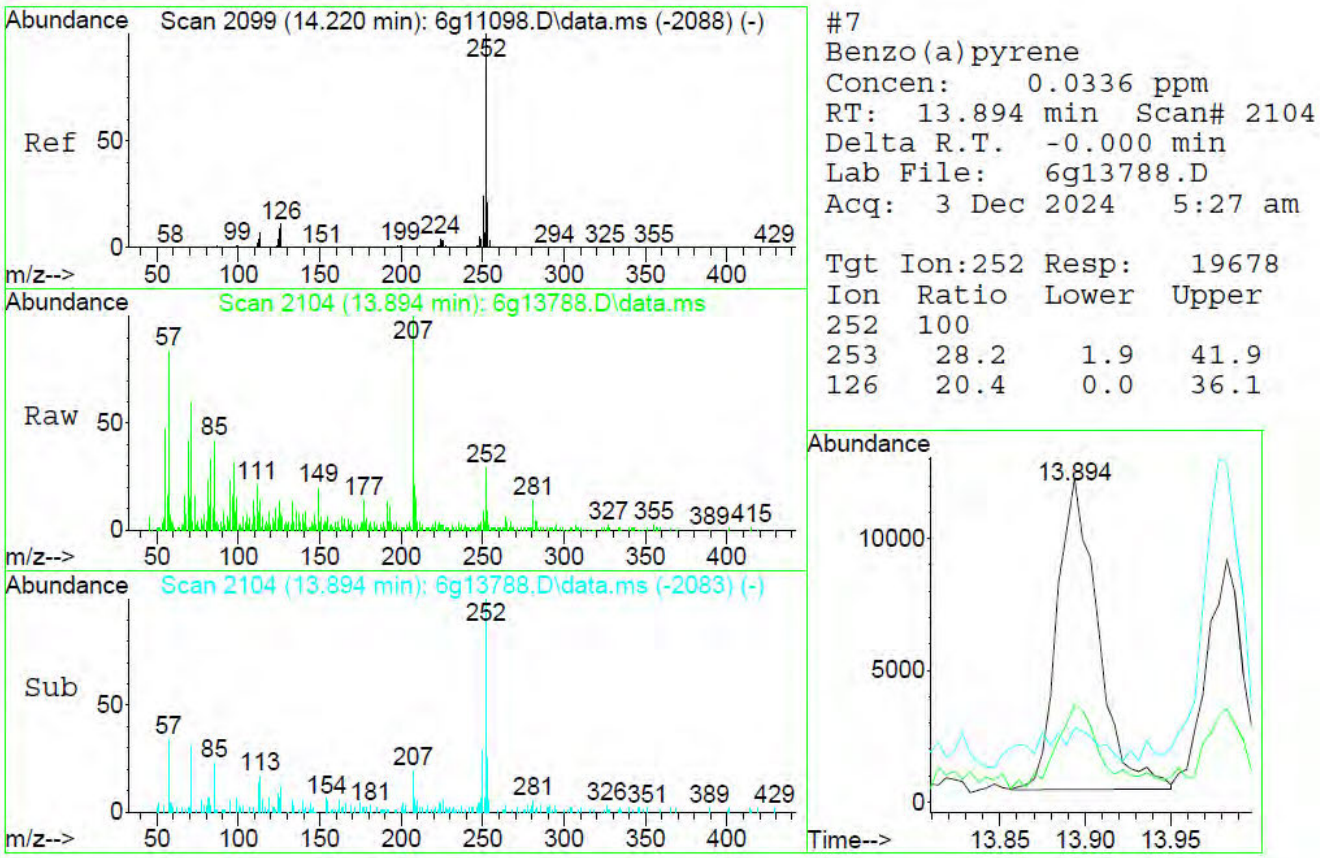
The most likely source of the benzo(a)pyrene is unidentified sporadic low-level contamination in the laboratory. There is no evidence of systematic contamination in the laboratory but given the presence of all target compounds in calibration standards and spiking solutions, the potential for incidental contamination exists, particularly at low levels. The detected concentration was less than twice the reporting limit (RL) of 0.02 µg/L, which is also the concentration of the lowest calibration standard.

Sporadic low-level hits of benzo(a)pyrene have been detected in field blanks, method blanks, and samples throughout the extended drinking water monitoring (EDWM) program. The following table summarizes benzo(a)pyrene detections for samples collected from September through mid-December, 2024.

Sample Type	**Number**	**# ND**	**%ND**	**# <RL**	**% <RL**	**# >RL**	**% >RL**
Field Sample	1667	1634	98%	25	1.5%	8	0.5%
Field Reagent Blank	269	260	97%	7	2.6%	2	0.7%
Method Blank	120	118	98%	2	1.7%	0	0.0%

The fact that frequency of detections in field reagent blanks is the same or slightly greater than that in the field samples further supports the conclusion that benzo(a)pyrene was not present in the sample but was introduced in the laboratory.

Figure 1. Mass Spectral Analysis of J1-TW-0018183-24092-N



#7
Benzo(a)pyrene
Concen: 0.0336 ppm
RT: 13.894 min Scan# 2104
Delta R.T. -0.000 min
Lab File: 6g13788.D
Acq: 3 Dec 2024 5:27 am

Tgt Ion:252 Resp: 19678

Ion	Ratio	Lower	Upper
252	100		
253	28.2	1.9	41.9
126	20.4	0.0	36.1

Attachment 2: (b) (4) Laboratory Report L2472820

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2472820
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	EDWM
Project Number:	60729369
Report Date:	12/19/24

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

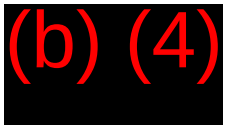
(b) (4)

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2472820-01	J1-TW-0018183-24092-N-R1	WATER	HONOLULU, HI	12/11/24 09:06	12/12/24
L2472820-02	J1-TB-241211-24092-N	WATER	HONOLULU, HI	12/11/24 08:35	12/12/24



Project Name:	EDWM	**Lab Number:**	L2472820
Project Number:	60729369	**Report Date:**	12/19/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

(b) (4)

Project Name: EDWM **Lab Number:** L2472820
Project Number: 60729369 **Report Date:** 12/19/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 12/19/24

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/24 19:06
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01 Date Collected: 12/11/24 09:06

Client ID: J1-TW-0018183-24092-N-R1 Date Received: 12/12/24

Sample Location: HONOLULU, HI Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	118		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	87		70-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-02
Client ID: J1-TB-241211-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 08:35
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/24 15:35
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-02
Client ID: J1-TB-241211-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 08:35
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-02
Client ID: J1-TB-241211-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 08:35
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-02
Client ID: J1-TB-241211-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 08:35
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-02
Client ID: J1-TB-241211-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 08:35
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
Total TIC Compounds	0.600	J	ug/l			1
iso-Propyl Alcohol	0.600	NJ	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	119		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	90		70-130

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2009044-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2009044-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2009044-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2009044-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2009044-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)	for sample(s):	01-02	Batch:	WG2009044-5	

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND		ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	90		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2009044-3 WG2009044-4								
1-Pentene	68		67		50-130	1		30
Pentane	68		68		50-130	0		30
Tertiary Butanol	81		81		50-130	0		30
Cyclopentane	71		71		50-130	0		30
2-Methylpentane	70		73		50-130	4		30
Methyl tert butyl ether	73		74		50-130	1		30
3-Methylpentane	76		78		50-130	3		30
1-Hexene	76		77		50-130	1		30
n-Hexane	70		72		50-130	3		30
Isopropyl Ether	78		80		50-130	3		30
Ethyl-Tert-Butyl-Ether	74		75		50-130	1		30
Methylcyclopentane	78		81		50-130	4		30
2,4-Dimethylpentane	74		76		50-130	3		30
Cyclohexane	80		81		50-130	1		30
2-Methylhexane	74		78		50-130	5		30
Benzene	81		82		50-130	1		30
2,3-Dimethylpentane	80		82		50-130	2		30
3-Methylhexane	70		73		50-130	4		30
Tertiary-Amyl Methyl Ether	64		66		50-130	3		30
Isooctane	78		82		50-130	5		30
Heptane	76		80		50-130	5		30
Methylcyclohexane	65		68		50-130	5		30
2-Methylheptane	79		82		50-130	4		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2009044-3 WG2009044-4								
3-Methylheptane	81		84		50-130	4		30
Toluene	80		82		50-130	2		30
Octane	78		80		50-130	3		30
Ethylbenzene	76		78		50-130	3		30
p/m-Xylene	84		85		50-130	1		30
Nonane (C9)	69		72		50-130	4		30
o-Xylene	82		84		50-130	2		30
Isopropylbenzene	84		85		50-130	1		30
n-Propylbenzene	84		86		50-130	2		30
1-Methyl-3-Ethylbenzene	82		82		50-130	0		30
1-Methyl-4-Ethylbenzene	89		90		50-130	1		30
1,3,5-Trimethylbenzene	82		85		50-130	4		30
1-Decene	64		68		50-130	6		30
1-Methyl-2-Ethylbenzene	85		87		50-130	2		30
Decane (C10)	80		84		50-130	5		30
1,2,4-Trimethylbenzene	80		81		50-130	1		30
sec-Butylbenzene	87		88		50-130	1		30
1-Methyl-4-N-Propylbenzene	77		78		50-130	1		30
n-Butylbenzene	83		86		50-130	4		30
1,2-Diethylbenzene	82		84		50-130	2		30
Undecane	86		89		50-130	3		30
N-Pentylbenzene	84		85		50-130	1		30
Dodecane (C12)	100		101		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

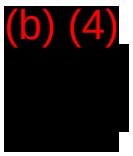
Lab Number: L2472820
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2009044-3 WG2009044-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	101		101		70-130
Toluene-d8	96		98		70-130
4-Bromofluorobenzene	104		102		70-130

(b) (4)

SEMIVOLATILES



Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/17/24 17:02
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.90	2.66	1
C1-Decalins	ND		ng/l	4.90	2.66	1
C2-Decalins	ND		ng/l	4.90	2.66	1
C3-Decalins	ND		ng/l	4.90	2.66	1
C4-Decalins	ND		ng/l	4.90	2.66	1
Naphthalene	ND		ng/l	9.80	2.69	1
C1-Naphthalenes	ND		ng/l	9.80	2.69	1
C2-Naphthalenes	ND		ng/l	9.80	2.69	1
C3-Naphthalenes	ND		ng/l	9.80	2.69	1
C4-Naphthalenes	ND		ng/l	9.80	2.69	1
2-Methylnaphthalene	ND		ng/l	9.80	6.50	1
1-Methylnaphthalene	ND		ng/l	9.80	4.24	1
Benzothiophene	ND		ng/l	9.80	2.53	1
C1-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C2-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C3-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C4-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
Biphenyl	ND		ng/l	9.80	2.09	1
2,6-Dimethylnaphthalene	ND		ng/l	9.80	2.99	1
Dibenzofuran	ND		ng/l	9.80	3.68	1
Acenaphthylene	ND		ng/l	9.80	5.13	1
Acenaphthene	ND		ng/l	9.80	3.58	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.80	1.88	1
Fluorene	ND		ng/l	9.80	4.17	1
C1-Fluorenes	ND		ng/l	9.80	4.17	1
C2-Fluorenes	ND		ng/l	9.80	4.17	1
C3-Fluorenes	ND		ng/l	9.80	4.17	1
Dibenzothiophene	ND		ng/l	9.80	3.27	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01 Date Collected: 12/11/24 09:06

Client ID: J1-TW-0018183-24092-N-R1 Date Received: 12/12/24

Sample Location: HONOLULU, HI Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.80	3.27	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.80	3.27	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.80	3.27	1
C1-Dibenzothiophenes BS	ND		ng/l	9.80	3.27	1
C2-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C3-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C4-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
Phenanthrene	ND		ng/l	9.80	5.85	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.80	5.85	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.80	5.85	1
2-Methylanthracene (2MA)	ND		ng/l	9.80	5.85	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.80	5.85	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.80	5.85	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.80	5.85	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
Retene	ND		ng/l	9.80	5.93	1
Anthracene	ND		ng/l	9.80	3.37	1
Carbazole	ND		ng/l	9.80	5.31	1
Fluoranthene	ND		ng/l	9.80	6.56	1
Benzo(b)fluorene	ND		ng/l	9.80	4.56	1
7H-Benzo(c)fluorene	ND		ng/l	9.80	4.56	1
2-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
4-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
1-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
Pyrene	ND		ng/l	9.80	6.92	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C1-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C2-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C3-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C4-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
Benz(a)anthracene	ND		ng/l	9.80	5.91	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01 Date Collected: 12/11/24 09:06

Client ID: J1-TW-0018183-24092-N-R1 Date Received: 12/12/24

Sample Location: HONOLULU, HI Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.80	6.95	1
C1-Chrysenes	ND		ng/l	9.80	6.95	1
C2-Chrysenes BS	ND		ng/l	9.80	6.95	1
C3-Chrysenes	ND		ng/l	9.80	6.95	1
C4-Chrysenes	ND		ng/l	9.80	6.95	1
Benzo(b)fluoranthene	ND		ng/l	9.80	7.10	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(a)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(e)pyrene	ND		ng/l	9.80	7.00	1
Benzo(a)pyrene	ND		ng/l	9.80	7.46	1
Perylene	ND		ng/l	9.80	4.51	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.80	9.41	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.80	6.36	1
Benzo(g,h,i)perylene	ND		ng/l	9.80	6.47	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	63		50-130
Phenanthrene-d10	91		50-130
Benzo(a)pyrene-d12	119		50-130

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/17/24 09:42
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2009647-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2472820
Report Date: 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/17/24 09:42
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2009647-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2472820
Report Date: 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/17/24 09:42
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2009647-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	65		50-130
Phenanthrene-d10	94		50-130
Benzo(a)pyrene-d12	112		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2009647-2 WG2009647-3								
Naphthalene	82		78		50-130	5		30
2-Methylnaphthalene	80		78		50-130	3		30
Acenaphthylene	82		81		50-130	1		30
Acenaphthene	83		80		50-130	4		30
Fluorene	83		82		50-130	1		30
Phenanthrene	78		76		50-130	3		30
Anthracene	87		86		50-130	1		30
Fluoranthene	56		55		50-130	2		30
Pyrene	63		62		50-130	2		30
Benz(a)anthracene	86		85		50-130	1		30
Chrysene/Triphenylene	82		81		50-130	1		30
Benzo(b)fluoranthene	88		87		50-130	1		30
Benzo(j)+(k)fluoranthene	92		91		50-130	1		30
Benzo(a)pyrene	99		98		50-130	1		30
Indeno(1,2,3-cd)pyrene	125		123		50-130	2		30
Dibenz(a,h)+(a,c)anthracene	125		124		50-130	1		30
Benzo(g,h,i)perylene	122		121		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2009647-2 WG2009647-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	81		78		50-130
Phenanthrene-d10	84		82		50-130
Benzo(a)pyrene-d12	115		114		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 12/17/24 22:12
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0004	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0004	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0002	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472820-01
Client ID: J1-TW-0018183-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 12/11/24 09:06
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.032	0.027	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	88		50-130
d50-Tetracosane	88		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2472820
Report Date: 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/17/24 13:49
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2009647-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2472820
Report Date: 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/17/24 13:49
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/16/24 10:56

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2009647-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	89		50-130
d50-Tetracosane	88		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2472820
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01 Batch: WG2009647-2 WG2009647-3								
Nonane (C9)	73		69		50-130	6		30
n-Decane (C10)	79		75		50-130	5		30
n-Dodecane (C12)	86		83		50-130	4		30
n-Tetradecane (C14)	89		87		50-130	2		30
n-Hexadecane (C16)	96		94		50-130	2		30
n-Octadecane (C18)	98		97		50-130	1		30
n-Nonadecane (C19)	96		95		50-130	1		30
n-Eicosane (C20)	98		97		50-130	1		30
n-Docosane (C22)	94		93		50-130	1		30
n-Tetracosane (C24)	100		100		50-130	0		30
n-Hexacosane (C26)	94		94		50-130	0		30
n-Octacosane (C28)	95		95		50-130	0		30
n-Triacontane (C30)	94		94		50-130	0		30
n-Hexatriacontane (C36)	82		85		50-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	93		91		50-130
d50-Tetracosane	92		92		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Present/Intact

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2472820-01A	Vial Ascorbic Acid/HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2472820-01B	Vial Ascorbic Acid/HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2472820-01C	Vial Ascorbic Acid/HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2472820-01D	Amber 1L Na2S2O3	A	7	7	4.1	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2472820-01E	Amber 1L Na2S2O3	A	7	7	4.1	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2472820-02A	Vial HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2472820-02B	Vial HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	EDWM	**Lab Number:**	L2472820
Project Number:	60729369	**Report Date:**	12/19/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2472820
Project Number:	60729369	**Report Date:**	12/19/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: EDWM **Lab Number:** L2472820

Project Number: 60729369 **Report Date:** 12/19/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

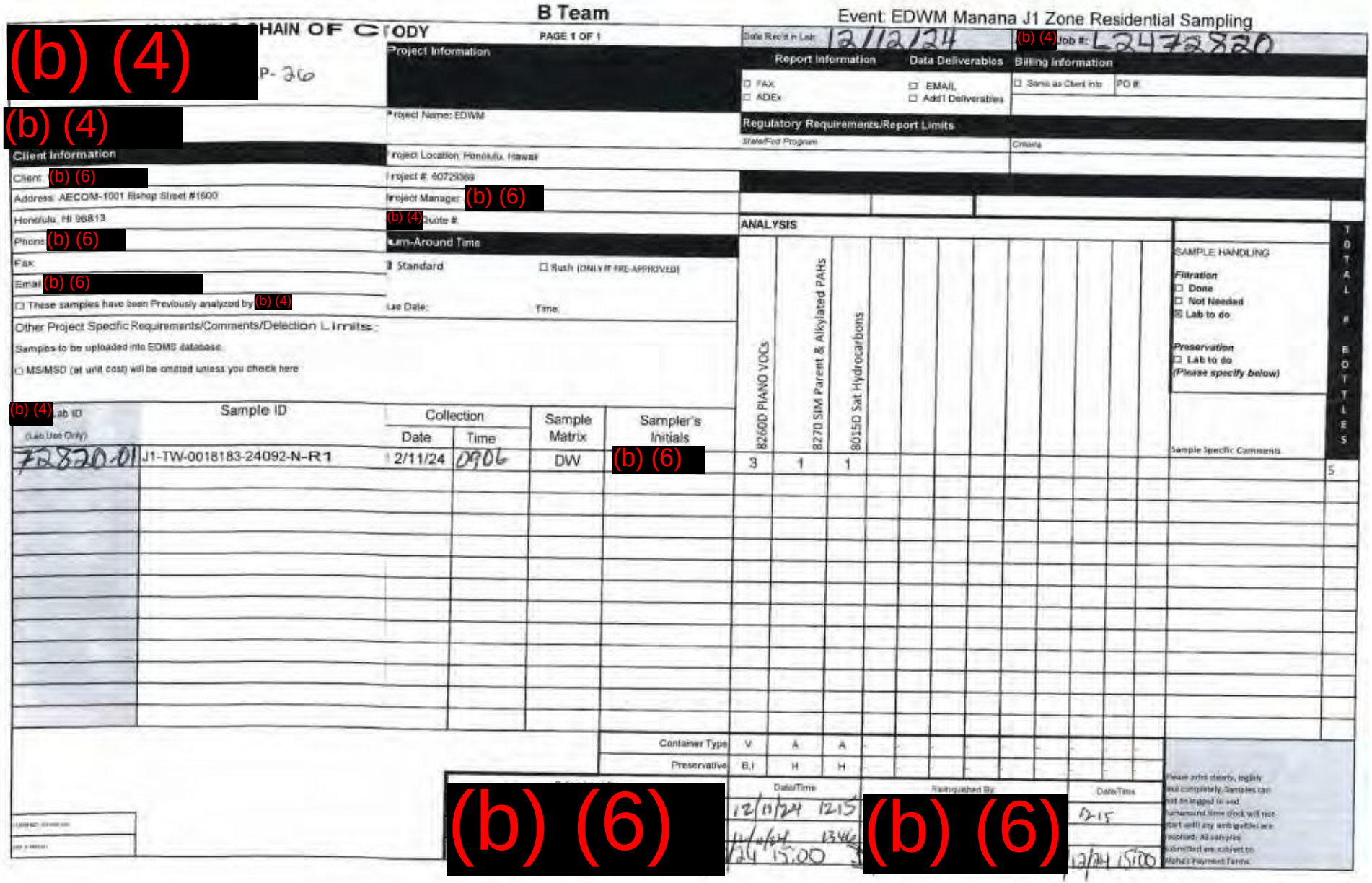
Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.



B Team

Event: EDWM Manana J1 Zone Residential Sampling

(b) (4)

HAIN OF CUSTODY

PAGE 1 OF 1

P-36

Date Rec'd in Lab: 3/12/24

(b) (4) Job #: L2472820

Project Information

Project Name: EDWM

Project Location: Honolulu, Hawaii

Project #: 60729369

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information — ☐ FAX ☐ ADEx

Data Deliverables — ☐ EMAIL ☐ Add'l Deliverables

Billing Information — ☐ Same as Client info; PO #:

Regulatory Requirements/Report Limits — State/Fed Program; Criteria

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

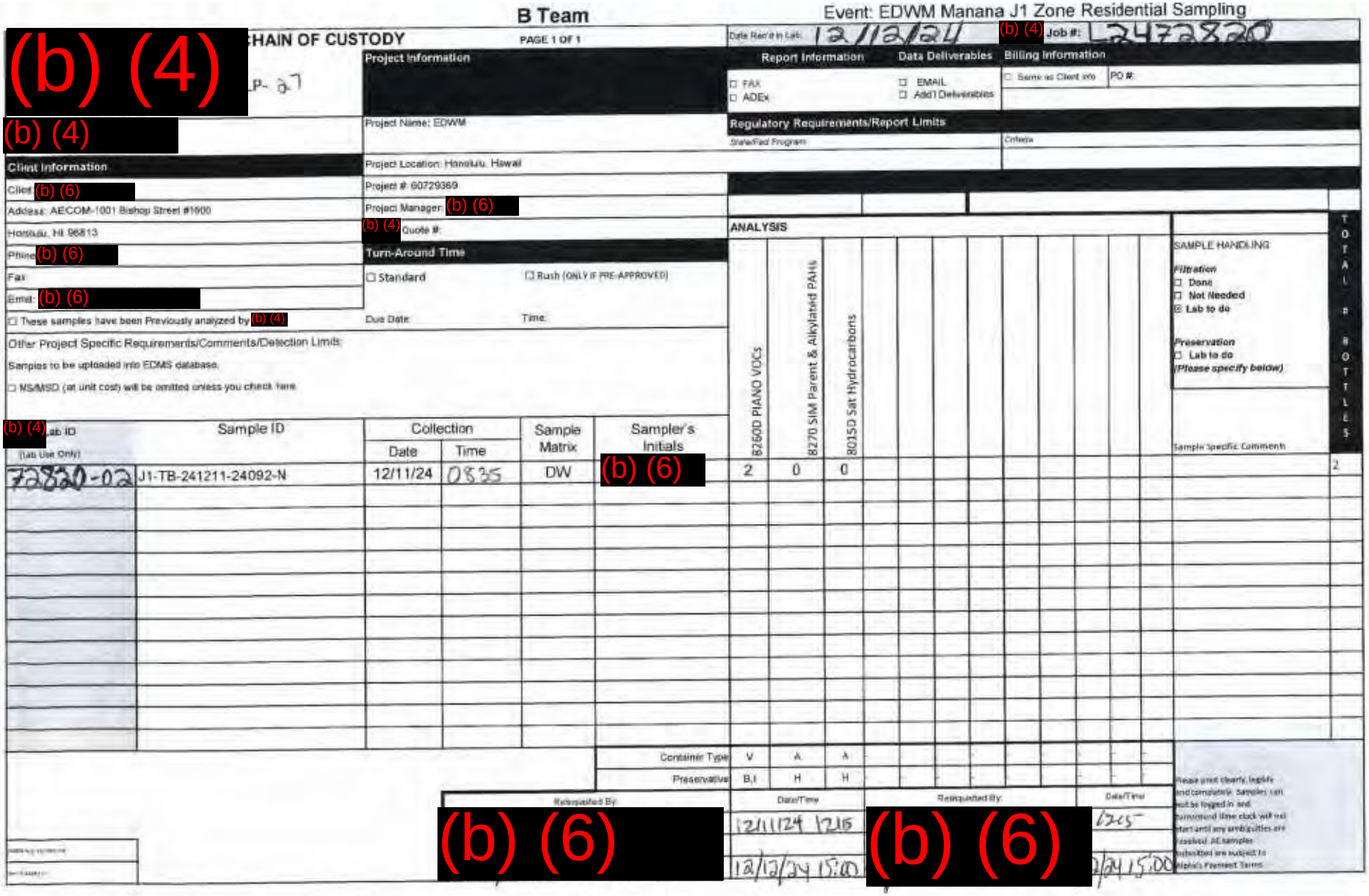
Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	Sample Specific Comments	TOTAL # BOTTLES
72820-01	J1-TW-0018183-24092-N-R1	2/11/24	0906	DW	(b) (6)	3	1	1		5



B Team

Event: EDWM Manana J1 Zone Residential Sampling

(b) (4)

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/12/24

(b) (4) Job #: L2472820

Project Information

Report Information

Data Deliverables

Billing Information

☐ FAX ☐ ADEx ☐ EMAIL ☐ Add'l Deliverables ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Project Name: EDWM

Project Location: Honolulu, Hawaii

Project #: 60729369

Project Manager: (b) (6)

(b) (4) Quote #:

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database.

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	TOTAL # BOTTLES
72820-02	J1-TB-241211-24092-N	12/11/24	0835	DW	(b) (6)	2	0	0	2
					Container Type	V	A	A	
					Preservative	B,I	H	H	

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☒ Lab to do

Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Relinquished By:	Date/Time	Relinquished By:	Date/Time
(b) (6)	12/11/24 1215	(b) (6)	1215
	12/12/24 15:00		12/24 15:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Carrier	Origin	Air waybill number	Date of departure	Final dest.
016	HNL	016-42955850	12/11/24	BOS

Routing: ETD | 1st flight #/city: 218 / BOS | 2nd flight #/city: 217 / BOS | 3rd flight #/city | ETA

UNITED CARGO QuickPak
For domestic service: 1-800-UA-CARGO unitedcargo.com

From
Shipper's name: AECOM
Shipper's reference #: 60729369.00.30.01
Company name: AECOM
(b) (6)
Street address: 1001 BISHOP ST STE 1800
City: HONOLULU | State: HI | Zip: 96813

To
(b) (4)

No. of pieces	Weight/lbs	Description	Declared value
	1-25	WATER SAMPLES	
	26-50		
	51-75		
	76-100		
Total 1		Handling information/LifeGuard	

Hold for notify info | Rate class (SCR)

Third party billing
Account #

It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage. Shipper and Consignee Agree that the shipments described herein are subject to governing rules and regulations stated in United Airlines current tariffs and conditions of carriage. Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.

Signature (b) (6)

Signature of Shipper or Agent above and initial applicable box below

✓ This shipment does not contain dangerous goods | This shipment does contain dangerous goods

Origin station code/location by: HNLFF | UA agent (full name) | Date | Time

Form of payment
Credit card | Type | Exp date
Comat | GBL
✓ Bill customer acct. no.
72300750012

Received in good order and condition
Consignee signature
Date | Time
Destination station code/location by | UA agent (full name) | Date | Time

Weight charge	
Valuation charge	
Fuel	
Freight processing fee ME	
Taxes	
Other	
Total	

CGOAC22QP-NONUMBER (Rev. 01/20)
Part1 Shipper, Part2 Delivery, Part3 Consignee, Part4 Destination Airport, Part5 Carrier, Part6 Airport of Origin

016 42955850

AECOM BOS

016 | HNL | 42955850 ORIGINAL 016 - 42955850

Shipper's Name and Address	Shipper's Account Number	Not negotiable **Air Waybill** Issued by	United Airlines Cargo P.O.BOX 66100 Chicago, Illinois 60666
AECOM 1001 BISHOP ST STE 1600 HONOLULU HI 96813 US TE 8082584213		Copies1,2 and 3 of this Air Waybill are originals and have the same validity.	
Consignee's Name and Address	Consignee's Account Number	It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.	
(b) (4)			
Issuing Carrier's Agent Name and City AECOM HONOLULU		Accounting Information QPK - QuickPak - Domestic (QPK)	
Agent's IATA Code	Account No 72300750012		
Airport of departure (Addr. of first Carrier) and requested Routing HONOLULU			

to	By first Carr	Routing and Destination	to	by	to	by	Currency	Chg Code	WT VAL		Other		Declared Value for Carriage	Declared Value for Customs
ORD	UA		BOS	UA			USD	PP	X		X		NVD	NCV

Airport of Destination	For Carrier Use Only		Amount of Insuran	INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with conditions thereof, indicate amount to be insured in figures in box marked "Amount of Insurance".
	Flight /Date	Flight /Date		
BOSTON	UA0218	11DEC	XXX	

Handling Information

SCI

No. of Pieces RCP	Gross Weight	Kg lb	Rate Class Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (incl. Dimensions Volume)
1	45	L	QC	45	1.6	72	WATER SAMPLE
1	45.001					72	2.825 CF

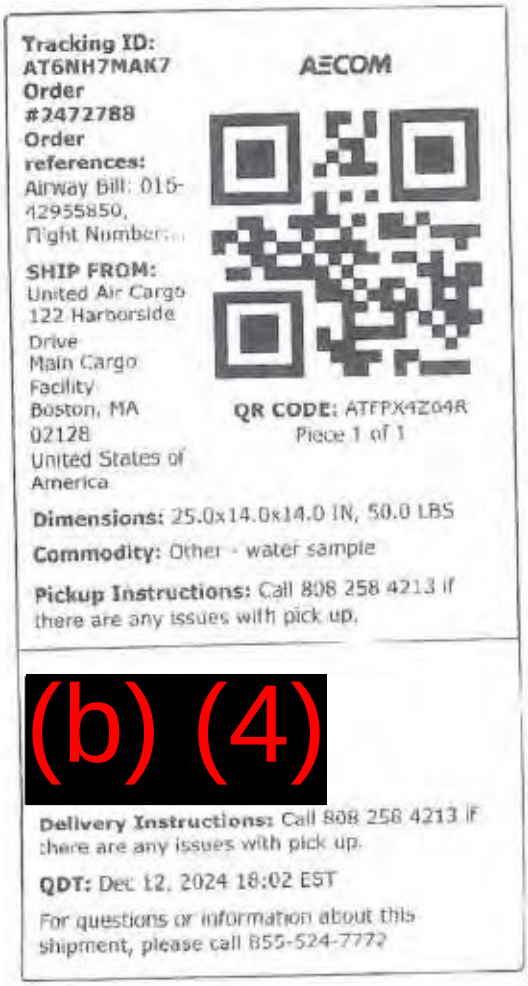
Prepaid	Weight Charge	Collect	Other Charges
72			MSC 0 RDC 0 MYC 0
Valuation Charge			MCC 0 XBC 0 TXC 2.4
Tax			
Total other Charges Due Agent			Shipper c... part of the... and is in p... Regulation...
Total other Charges Due Carrier 2.4			
Total Prepaid 74.4	Total Collect		11-DEC-2024 ... HONOLULU
Currency Conversion Rates USD 1	cc charges in Dest. Currency		Executed on (Date) at (Place) Signature of Issuing Carrier or its Agent
For Carriers Use only at Destination	Charges at Destination	Total Collect Charges	

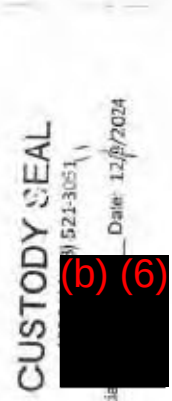
(b) (6)

...at insofar as any ...escribed by name ...angerous Goods

COPY 1 ISSUING CARRIER ACCOUNTING

UNITED
AECOM
BOSTON MASSACHUSETTS
BOS UA 217 /12
ORD UA 218 /11
UA9016 905099
12-11
19: 22
V162388


Tracking ID:
AT6NH7MAK7
Order
#2472788
Order
references:
Airway Bill: 016-
42955850,
Flight Number:...
SHIP FROM:
United Air Cargo
122 Harborside
Drive
Main Cargo
Facility
Boston, MA
02128
United States of
America
AECOM
QR CODE: ATFPX4Z04R
Piece 1 of 1
Dimensions: 25.0x14.0x14.0 IN, 50.0 LBS
Commodity: Other - water sample
Pickup Instructions: Call 808 258 4213 if
there are any issues with pick up.
(b) (4)
Delivery Instructions: Call 808 258 4213 if
there are any issues with pick up.
QDT: Dec 12, 2024 18:02 EST
For questions or information about this
shipment, please call 855-524-7772


CUSTODY SEAL
(b) (6)
Date: 12/9/2024

CUSTODY SEAL
(b) (6)
Date: 12/9/2024

Appendix C. Tier 1 Analysis Tech Memos

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile – A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic – Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO – An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit – The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

March 14, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Benzo(a)pyrene Detection Investigation Zone A2, Building 55**

Attention CDR Dunn:

On Wednesday, December 11, 2024, AECOM Technical Services, Inc. was notified of a benzo(a)pyrene detection of 0.025 micrograms per liter (µg/L) in sample A2-TW-0014271-24336-N, collected from the women's locker room sink at Building 55 in Zone A2, on December 5, 2024. The sample was analyzed at (b) (4), via gas chromatography-mass spectrometry using United States Environmental Protection Agency Method 525.2 and reported in sample delivery group (SDG) DA69243. This result is above the laboratory's reporting limit (RL) of 0.02 µg/L.

AECOM launched an investigation to determine if the reported detection is likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **AECOM concludes that based on multiple lines of evidence, this benzo(a)pyrene detection is not attributable to a petrogenic source and is unrelated to JP-5. Furthermore, it is likely that the benzo(a)pyrene found is due to minor contamination in the laboratory, which is not unusual at very low concentrations. AECOM concludes that benzo(a)pyrene was not present in the field sample.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control (QC) data
- Results of supplemental analysis

Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that was designated in the revised Extended Drinking Water Monitoring (EDWM) Plan (October 2024) as a compound that is potentially associated with petroleum compounds, and therefore, must be evaluated when detected above the reporting limit.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits (MDLs) and met the Data Quality Objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. One part of evaluating benzo(a)pyrene is to send an additional sample to (b) (4) They measure the amount of petroleum hydrocarbons and other potential indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the EDWM Program. Specifically, when evaluating Total Petroleum Hydrocarbon (TPH) detections, the PIANO and SHC methods can identify and quantitate individual hydrocarbon (with RLs of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. This additional analysis performed exceeds industry standards and goes beyond meeting the DQOs of EDWM.

Additional sample volume was shipped to (b) (4) on December 11, 2024, for Tier 2 analyses ((b) (4) SDG L2472761). **There were no detections in the PIANO or SHCs analyses. Benzo(a)pyrene was not detected and there were no detections of any other PAHs above the RL of 0.010 µg/L.**

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water in Building 55 does not contain benzo(a)pyrene nor any other petroleum compounds. The original detection of benzo(a)pyrene is most likely due to a laboratory artifact. AECOM is working with the laboratory to try to identify the mechanism by which the contaminant may have been introduced to the sample and will continue to do so. No additional action is currently recommended.

A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory report from (b) (4) is provided in Attachment 2. Attachment 3 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6).

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Chromatographic Interpretation of Sample A2-TW-0014271-24336-N

Attachment 2: (b) (4) Laboratory Report L2472761

Attachment 3: Glossary of Terms

Attachment 1: *Technical Review of Sample A2-TW-0014271-24336-N*

The chromatogram and mass spectrum for A2-TW-0014271-24336-N were reviewed to verify that benzo(a)pyrene was correctly identified. The retention time and ion ratios met all criteria indicating that the peak was correctly identified as benzo(a)pyrene. The mass spectrum is presented as Figure 1.

All associated field and laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have led to a false positive result. Items reviewed included:

- Field reagent blank results
- Method blank results
- Blank spike recoveries
- Surrogate standard recoveries
- Internal standard recoveries
- Initial calibration (ICAL) curve
- Initial calibration verification (ICV)
- Continuing calibration verification (CCV)

Benzo(a)pyrene was not detected above the detection limit (DL) in either the field reagent blank or method blank. Associated results in the blank spike, ICAL, ICV, and CCV were within acceptance limits. The internal standard chrysene-d12 is used for quantitation of benzo(a)pyrene recovered below the lower acceptance limit. This nonconformance could have caused the reported result to be biased high. There is also evidence of potential positive bias due to the fact that one of three surrogate recoveries was 150% which is above the acceptance limits of 70-130%. It is possible that in the absence of these nonconformances, the reported result would have fallen below the reporting limit of 0.02 µg/L.

Although the reported concentration may be biased high, there is nothing in the (b) (4) data to suggest that either the presence or identity were reported incorrectly in this sample, however, it is extremely unlikely that benzo(a)pyrene was present in this sample due to a petrogenic source. The preliminary evidence supporting this assertion includes:

- Non-detect results in both the diesel range organics (DRO) and oil range organics (ORO) of the SW-846 8015D total petroleum hydrocarbon (TPH) analysis; and
- Non-detect results for all other polycyclic aromatic hydrocarbons (PAHs).

Benzo(a)pyrene is classified as a PAH, and PAHs from petrogenic sources are known to be less abundant relative to alkane hydrocarbons (alkane hydrocarbons would be detected in the TPH ranges.) Benzo(a)pyrene is almost never the most abundant PAH in any pyrogenic or petrogenic PAH pattern, so the ratios of the other parent (and alkylated) can provide valuable clues about the PAH source(s). A pyrogenic PAH pattern is almost always dominated by fluoranthene and pyrene, neither of which were detected. If benzo(a)pyrene was present in the sample due to a petroleum source, additional PAHs would also be expected to be present.

The ability to identify and quantitate individual DRO and ORO constituents is limited in the standard 8015D method used by (b) (4), and its detection limits for the other PAHs measured via method 525.2 are an order of magnitude greater than the detection limit for benzo(a)pyrene. Therefore, to provide further confidence in the assertions above related to the absence of other petroleum indicators, the sample was recollected and sent to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D - Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons

All results were non-detect in all three analyses, with the exception of one PAH, fluoranthene, which was detected below the reporting limit of 0.010 ug/L, confirming the lack of evidence for a petrogenic source of the detection.

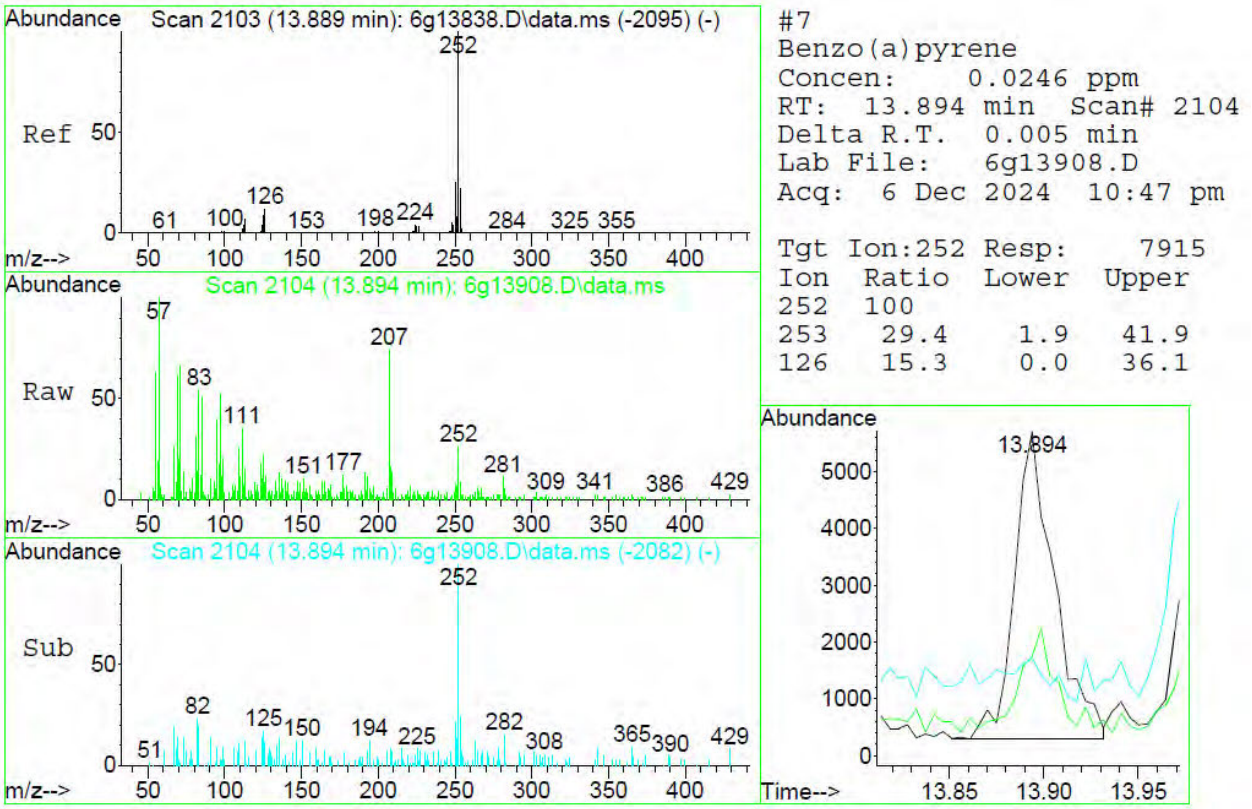
The most likely source of the benzo(a)pyrene is unidentified sporadic low-level contamination in the laboratory. There is no evidence of systematic contamination in the laboratory but given the presence of all target compounds in calibration standards and spiking solutions, the potential for incidental contamination exists, particularly at low levels. The detected concentration was less than twice the reporting limit (RL) of 0.02 µg/L, which is also the concentration of the lowest calibration standard.

Sporadic low-level hits of benzo(a)pyrene have been detected in field blanks, method blanks, and samples throughout the extended drinking water monitoring (EDWM) program. The following table summarizes benzo(a)pyrene detections for samples collected from September through mid-December, 2024.

Sample Type	**Number**	**# ND**	**%ND**	**# <RL**	**% <RL**	**# >RL**	**% >RL**
Field Sample	1667	1634	98%	25	1.5%	8	0.5%
Field Reagent Blank	269	260	97%	7	2.6%	2	0.7%
Method Blank	120	118	98%	2	1.7%	0	0.0%

The fact that frequency of detections in field reagent blanks is the same or slightly greater than that in the field samples further supports the conclusion that benzo(a)pyrene was not present in the sample but was introduced in the laboratory.

Figure 1. Mass Spectral Analysis of A2-TW-0014271-24336-N



#7
Benzo(a)pyrene
Concen: 0.0246 ppm
RT: 13.894 min Scan# 2104
Delta R.T. 0.005 min
Lab File: 6g13908.D
Acq: 6 Dec 2024 10:47 pm

Tgt Ion:252 Resp: 7915

Ion	Ratio	Lower	Upper
252	100		
253	29.4	1.9	41.9
126	15.3	0.0	36.1

Attachment 2: (b) (4) Laboratory Report L2472761

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2472761
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	CTO24F0139
Project Number:	60729369.00.46.01
Report Date:	12/19/24

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2472761
Report Date: 12/19/24

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2472761-01	A2-TW-0014271-24336-N	WATER	HONOLULU, HI	12/05/24 12:02	12/12/24

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2472761
Project Number:	60729369.00.46.01	**Report Date:**	12/19/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761
Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 12/19/24

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/24 17:56
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	116		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	88		70-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2009044-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2009044-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2009044-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2009044-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2009044-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/24 22:22
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)		for sample(s):	01	Batch:	WG2009044-5

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND		ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	90		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2472761
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2009044-3 WG2009044-4								
1-Pentene	68		67		50-130	1		30
Pentane	68		68		50-130	0		30
Tertiary Butanol	81		81		50-130	0		30
Cyclopentane	71		71		50-130	0		30
2-Methylpentane	70		73		50-130	4		30
Methyl tert butyl ether	73		74		50-130	1		30
3-Methylpentane	76		78		50-130	3		30
1-Hexene	76		77		50-130	1		30
n-Hexane	70		72		50-130	3		30
Isopropyl Ether	78		80		50-130	3		30
Ethyl-Tert-Butyl-Ether	74		75		50-130	1		30
Methylcyclopentane	78		81		50-130	4		30
2,4-Dimethylpentane	74		76		50-130	3		30
Cyclohexane	80		81		50-130	1		30
2-Methylhexane	74		78		50-130	5		30
Benzene	81		82		50-130	1		30
2,3-Dimethylpentane	80		82		50-130	2		30
3-Methylhexane	70		73		50-130	4		30
Tertiary-Amyl Methyl Ether	64		66		50-130	3		30
Isooctane	78		82		50-130	5		30
Heptane	76		80		50-130	5		30
Methylcyclohexane	65		68		50-130	5		30
2-Methylheptane	79		82		50-130	4		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2472761
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2009044-3 WG2009044-4								
3-Methylheptane	81		84		50-130	4		30
Toluene	80		82		50-130	2		30
Octane	78		80		50-130	3		30
Ethylbenzene	76		78		50-130	3		30
p/m-Xylene	84		85		50-130	1		30
Nonane (C9)	69		72		50-130	4		30
o-Xylene	82		84		50-130	2		30
Isopropylbenzene	84		85		50-130	1		30
n-Propylbenzene	84		86		50-130	2		30
1-Methyl-3-Ethylbenzene	82		82		50-130	0		30
1-Methyl-4-Ethylbenzene	89		90		50-130	1		30
1,3,5-Trimethylbenzene	82		85		50-130	4		30
1-Decene	64		68		50-130	6		30
1-Methyl-2-Ethylbenzene	85		87		50-130	2		30
Decane (C10)	80		84		50-130	5		30
1,2,4-Trimethylbenzene	80		81		50-130	1		30
sec-Butylbenzene	87		88		50-130	1		30
1-Methyl-4-N-Propylbenzene	77		78		50-130	1		30
n-Butylbenzene	83		86		50-130	4		30
1,2-Diethylbenzene	82		84		50-130	2		30
Undecane	86		89		50-130	3		30
N-Pentylbenzene	84		85		50-130	1		30
Dodecane (C12)	100		101		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2009044-3 WG2009044-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	101		101		70-130
Toluene-d8	96		98		70-130
4-Bromofluorobenzene	104		102		70-130

(b) (4)

SEMIVOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/13/24 22:23
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	5.00	2.71	1
C1-Decalins	ND		ng/l	5.00	2.71	1
C2-Decalins	ND		ng/l	5.00	2.71	1
C3-Decalins	ND		ng/l	5.00	2.71	1
C4-Decalins	ND		ng/l	5.00	2.71	1
Naphthalene	ND		ng/l	10.0	2.74	1
C1-Naphthalenes	ND		ng/l	10.0	2.74	1
C2-Naphthalenes	ND		ng/l	10.0	2.74	1
C3-Naphthalenes	ND		ng/l	10.0	2.74	1
C4-Naphthalenes	ND		ng/l	10.0	2.74	1
2-Methylnaphthalene	ND		ng/l	10.0	6.63	1
1-Methylnaphthalene	ND		ng/l	10.0	4.33	1
Benzothiophene	ND		ng/l	10.0	2.58	1
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58	1
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58	1
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58	1
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58	1
Biphenyl	ND		ng/l	10.0	2.13	1
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05	1
Dibenzofuran	ND		ng/l	10.0	3.75	1
Acenaphthylene	ND		ng/l	10.0	5.23	1
Acenaphthene	ND		ng/l	10.0	3.65	1
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92	1
Fluorene	ND		ng/l	10.0	4.25	1
C1-Fluorenes	ND		ng/l	10.0	4.25	1
C2-Fluorenes	ND		ng/l	10.0	4.25	1
C3-Fluorenes	ND		ng/l	10.0	4.25	1
Dibenzothiophene	ND		ng/l	10.0	3.34	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34	1
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34	1
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34	1
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34	1
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34	1
Phenanthrene	ND		ng/l	10.0	5.97	1
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97	1
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97	1
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97	1
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97	1
Retene	ND		ng/l	10.0	6.05	1
Anthracene	ND		ng/l	10.0	3.44	1
Carbazole	ND		ng/l	10.0	5.42	1
Fluoranthene	8.84	J	ng/l	10.0	6.69	1
Benzo(b)fluorene	ND		ng/l	10.0	4.65	1
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65	1
2-Methylpyrene[1]	ND		ng/l	10.0	7.06	1
4-Methylpyrene[1]	ND		ng/l	10.0	7.06	1
1-Methylpyrene[1]	ND		ng/l	10.0	7.06	1
Pyrene	ND		ng/l	10.0	7.06	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06	1
Naphthobenzothiophenes	ND		ng/l	10.0	4.37	1
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37	1
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37	1
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37	1
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37	1
Benz(a)anthracene	ND		ng/l	10.0	6.03	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	10.0	7.09	1
C1-Chrysenes	ND		ng/l	10.0	7.09	1
C2-Chrysenes BS	ND		ng/l	10.0	7.09	1
C3-Chrysenes	ND		ng/l	10.0	7.09	1
C4-Chrysenes	ND		ng/l	10.0	7.09	1
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24	1
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46	1
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46	1
Benzo(e)pyrene	ND		ng/l	10.0	7.14	1
Benzo(a)pyrene	ND		ng/l	10.0	7.61	1
Perylene	ND		ng/l	10.0	4.60	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49	1
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	64		50-130
Phenanthrene-d10	86		50-130
Benzo(a)pyrene-d12	85		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/13/24 18:14
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2008407-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/13/24 18:14
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2008407-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/13/24 18:14
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2008407-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	67		50-130
Phenanthrene-d10	83		50-130
Benzo(a)pyrene-d12	82		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2472761
Report Date: 12/19/24

PAHs - [redacted] Associated sample(s): 01 Batch: WG2008407-2 WG2008407-3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Naphthalene	67		64		50-130	5		30
2-Methylnaphthalene	78		74		50-130	5		30
Acenaphthylene	72		71		50-130	1		30
Acenaphthene	82		78		50-130	5		30
Fluorene	88		83		50-130	6		30
Phenanthrene	92		85		50-130	8		30
Anthracene	91		87		50-130	4		30
Fluoranthene	82		75		50-130	9		30
Pyrene	91		84		50-130	8		30
Benz(a)anthracene	84		81		50-130	4		30
Chrysene/Triphenylene	83		79		50-130	5		30
Benzo(b)fluoranthene	84		78		50-130	7		30
Benzo(j)+(k)fluoranthene	94		89		50-130	5		30
Benzo(a)pyrene	92		88		50-130	4		30
Indeno(1,2,3-cd)pyrene	88		86		50-130	2		30
Dibenz(a,h)+(a,c)anthracene	82		80		50-130	2		30
Benzo(g,h,i)perylene	89		86		50-130	3		30

[redacted]

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2472761
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4)	Associated sample(s): 01	Batch:	WG2008407-2	WG2008407-3				

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	79		74		50-130
Phenanthrene-d10	97		89		50-130
Benzo(a)pyrene-d12	99		95		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 12/17/24 04:01
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.001	1
n-Undecane (C11)	ND		mg/l	0.001	0.0005	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0005	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

SAMPLE RESULTS

Lab ID: L2472761-01
Client ID: A2-TW-0014271-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/05/24 12:02
Date Received: 12/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	81		50-130
d50-Tetracosane	81		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/16/24 18:13
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2008407-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/16/24 18:13
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/12/24 12:35

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2008407-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	78		50-130
d50-Tetracosane	78		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2472761
Report Date: 12/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01 Batch: WG2008407-2 WG2008407-3								
Nonane (C9)	62		59		50-130	5		30
n-Decane (C10)	71		68		50-130	4		30
n-Dodecane (C12)	80		76		50-130	5		30
n-Tetradecane (C14)	83		79		50-130	5		30
n-Hexadecane (C16)	89		84		50-130	6		30
n-Octadecane (C18)	92		88		50-130	4		30
n-Nonadecane (C19)	92		87		50-130	6		30
n-Eicosane (C20)	93		88		50-130	6		30
n-Docosane (C22)	90		85		50-130	6		30
n-Tetracosane (C24)	96		91		50-130	5		30
n-Hexacosane (C26)	90		85		50-130	6		30
n-Octacosane (C28)	91		86		50-130	6		30
n-Triacontane (C30)	91		86		50-130	6		30
n-Hexatriacontane (C36)	82		75		50-130	9		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	88		83		50-130
d50-Tetracosane	89		84		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Present/Intact

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2472761-01A	Vial Ascorbic Acid/HCl preserved	A	NA		3.0	Y	Present/Intact		A2-PIANO8260(14)
L2472761-01B	Vial Ascorbic Acid/HCl preserved	A	NA		3.0	Y	Present/Intact		A2-PIANO8260(14)
L2472761-01C	Vial Ascorbic Acid/HCl preserved	A	NA		3.0	Y	Present/Intact		A2-PIANO8260(14)
L2472761-01D	Amber 1L Na2S2O3	A	7	7	3.0	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2472761-01E	Amber 1L Na2S2O3	A	7	7	3.0	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

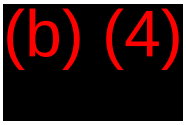
STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:	CTO24F0139	**Lab Number:**	L2472761
Project Number:	60729369.00.46.01	**Report Date:**	12/19/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2472761
Project Number:	60729369.00.46.01	**Report Date:**	12/19/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: CTO24F0139 **Lab Number:** L2472761

Project Number: 60729369.00.46.01 **Report Date:** 12/19/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

(b) (4)

(b) (4)

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab: 12/12/24

(b) (4) Job #: L2472761

Project Information

Project Name: CTO24F0139

Project Location: Honolulu, HI

Project #: 60729369.00.46.01

Project Manager: (b) (6)

(b) (4) Quote #:

Client Information

Client: AECOM

Address: 1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☒ Addl Deliverables

Billing Information

☐ Same as Client info PO #: 1677061

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

☐ These samples have been Previously analyzed by (b) (4)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

EDMS DB: JBPHH Drinking Water LTM; Event: Monthly EDWM Nov 2024; Zone: A2

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done ☐ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 SIM Parent and Alkylated PAHs	8015 Sat Hydrocarbons	8260 PIANO + TICs											
72761-01	A2-TW-0014271-24336-N	12/5/24	12:02	DW		☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
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						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
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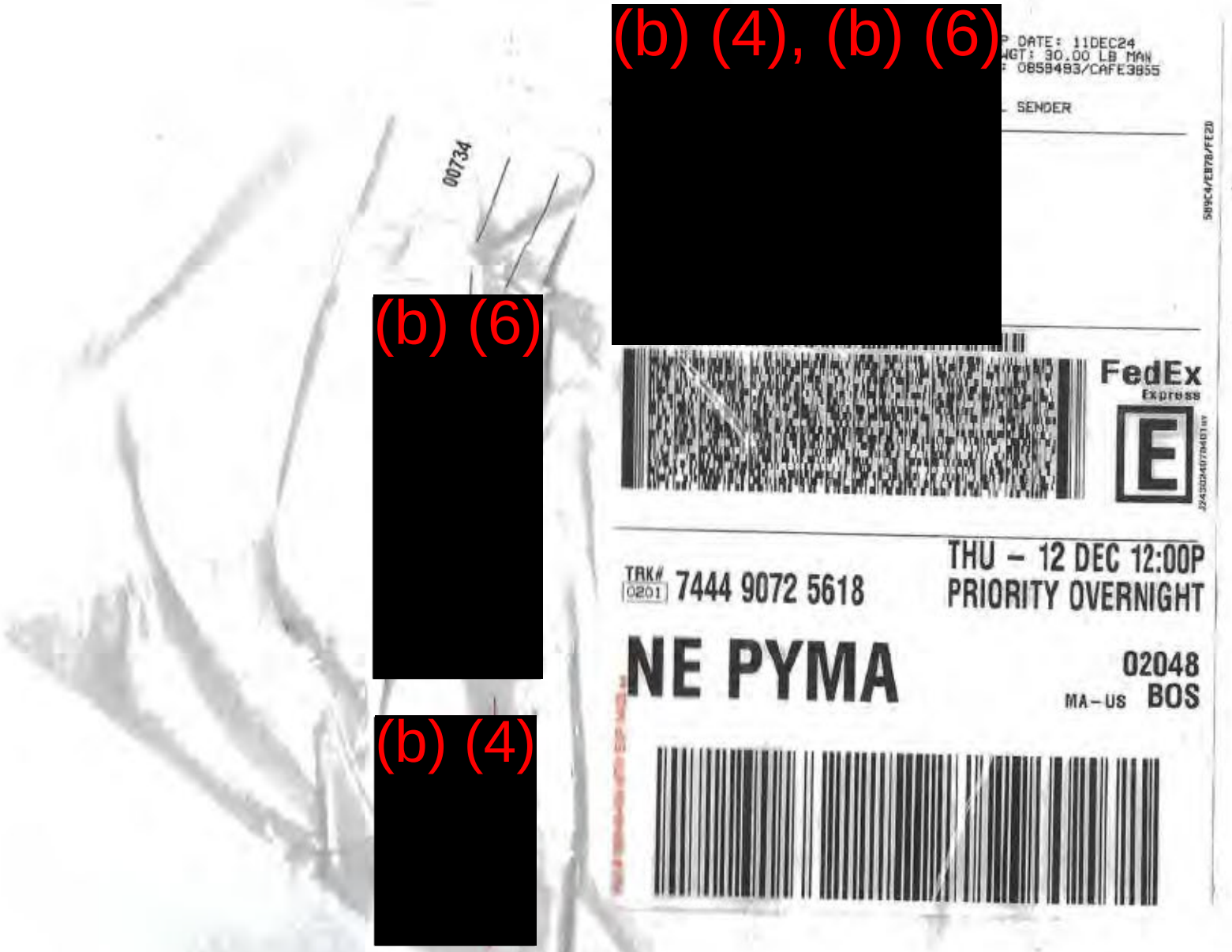
Container Type	-	-	-	-	-	-	-	-	-	-	-	-		
Preservative	-	-	-	-	-	-	-	-	-	-	-	-		

(b) (6)

	Date/Time	Received By:	Date/Time
	12/11/24 17:41	(b) (6)	12/12/24 10:38
	12/12/24 10:38		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 101-03-NJ (rev. 6-Jan-22)


(b) (4), (b) (6)
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(b) (6)
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Appendix C. Tier 1 Analysis Tech Memos

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile – A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic – Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO – An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit – The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

AECOM
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aecom.com

March 14, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Benzo(a)pyrene Detection Investigation Zone D2, Hydrant 1599 and Hydrant 79**

Attention CDR Dunn:

On Saturday, December 14, 2024, AECOM Technical Services, Inc. (AECOM) was notified of benzo(a)pyrene detections of 0.025 micrograms per liter (µg/L) and 0.035 µg/L in samples D2-DL-0000574-24336-N (Hydrant 1599, also known as FH: 429) and D2-DL-0017714-24336-N (Hydrant 79, also known as FH: 519), respectively, collected from hydrants in Zone D2, on December 11, 2024. The samples were analyzed at (b) (4) [redacted], via gas chromatography-mass spectrometry using United States Environmental Protection Agency Method 525.2 and reported in sample delivery group (SDG) DA69364. These results are above the laboratory's reporting limit (RL) of 0.02 µg/L.

AECOM launched an investigation to determine if the reported detections are likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **AECOM concludes that based on multiple lines of evidence, these benzo(a)pyrene detections are not attributable to a petrogenic source and are unrelated to JP-5. Furthermore, it is likely that the benzo(a)pyrene found is due to minor contamination in the laboratory, which is not unusual at very low concentrations. AECOM concludes that benzo(a)pyrene was not present in the field samples.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control data
- Results of supplemental forensic analyses

Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that was designated in the revised Extended Drinking Water Monitoring (EDWM) Plan (October 2024) as a compound that is potentially associated with petroleum compounds, and therefore, must be evaluated when detected above the RL.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits and met the data quality objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. One part of evaluating benzo(a)pyrene is to send an additional sample to (b) (4) [redacted]. They measure the amount of petroleum hydrocarbons and other potential indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the EDWM Program. Specifically, when evaluating total petroleum hydrocarbon detections, the PIANO and SHC methods can identify and quantitate individual hydrocarbon (with RLs of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and alkylated-PAHs method, all at very low RLs, providing additional information key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. This additional analysis performed exceeds industry standards and goes beyond meeting the DQOs of EDWM.

Additional sample volume was shipped to (b) (4) on December 16, 2024, for Tier 2 analyses ((b) (4) SDG L2473890). **There were no detections of benzo(a)pyrene or other PAHs in the Tier 2 analyses.** The laboratory reported detections at the detection limit of 1 µg/L of the C29 alkane, nonacosane, in each sample in the SHCs analysis. However, since this compound was found in the method blank at the same concentration, these detections were negated during validation.

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water in Hydrants 1599 and 79 do not contain benzo(a)pyrene nor any other petroleum compounds. The original detection of benzo(a)pyrene is most likely due to a laboratory artifact. AECOM is working with the laboratory to try to identify the mechanism by which the contaminant may have been introduced to the sample and will continue to do so. No additional action is currently recommended.

A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory report from (b) (4) is provided in Attachment 2. Attachment 3 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6).

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Technical Discussion of Samples D2-DL-0000574-24336-N and D2-DL-0017714-24336-N

Attachment 2: (b) (4) Laboratory Report L2473890

Attachment 3: Glossary of Terms

Attachment 1: Technical Discussion of Samples D2-DL-0000574-24336-N and D2-DL-0017714-24336-N

Appendix C. Tier 1 Analysis Tech Memos

Attachment 2: (b) (4) Laboratory Report L2473890

Appendix C. Tier 1 Analysis Tech Memos

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Appendix C. Tier 1 Analysis Tech Memos

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

March 17, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water EDWM TPH Detection Investigation Sample D3-DL-0017730-24336-3-N, Zone D3**

Attention CDR Dunn:

On Friday, December 27, 2024, AECOM was notified of a diesel range organics (DRO) detection of 87.4 microgram per liter (µg/L) in sample D3-DL-0017730-24336-3-N, collected from Hydrant 222 in Zone D3 on December 24, 2024. The sample was analyzed at (b) (4) for total petroleum hydrocarbons (TPH) via United States Environmental Protection Agency (EPA) SW-846 Method 8015D following micro-extraction by SW-846 Method 3511 and was reported in sample delivery group (SDG) DA69622. This sample was the field duplicate of sample D3-DL-0017730-24336-N, which yielded non-detect results for all TPH ranges.

AECOM initiated an investigation to determine if the reported detection was likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of jet propellant-5 (JP-5), and if not, to assign a probable reason for the detection. **After analyzing multiple lines of evidence, AECOM concludes that the substance detected is unrelated to JP-5 and was not present in the hydrant water. The substance detected is likely due to incidental contamination introduced at the time of sample collection or in the laboratory.**

The data reviewed to develop this conclusion included:

- Sample chromatogram
- Reference standard chromatograms
- Laboratory quality control (QC) results
- Field duplicate results
- Enhanced mass spectral evaluation (Tier 1)
- Results of supplemental forensic analyses (Tier 2)

Attachment 1 provides a detailed discussion of each line of evidence evaluated and how each of these lines contributed to the conclusion. Attachment 2 outlines the general procedure used to interpret chromatograms for the presence of petroleum hydrocarbons, and Attachment 3 provides a glossary of terms used in the investigation.

Supplementary Analyses

As soon as the detection was noted by laboratory personnel, (b) (4) initiated the Tier 1 mass spectral confirmation procedure outlined in the Extended Drinking Water Monitoring (EDWM) Plan. The procedure entails analyzing the sample and associated method blank extracts obtained in the original extraction using full scan Gas Chromatograph and Mass Spectroscopy (GC/MS) via Method 8270. The details of this procedure are included in the discussion in Attachment 1 and the report generated by (b) (4) is provided as Attachment 4.

At the same time, AECOM directed (b) (4) to send backup containers of the native sample and its duplicate to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – Polycyclic aromatic hydrocarbons (PAHs) and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide additional, more detailed information than is possible with the original analyses. For example, when evaluating TPH detections, the PIANO, and SHC methods are able to identify and quantitate individual hydrocarbons (with reporting limits [RLs] of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range with an RL of 80 µg/L. An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. These additional analyses exceed industry standards and go beyond meeting the data quality objectives (DQOs) of the EDWM Plan. **There were no target analyte detections of any kind in the Tier 2 analyses of sample D3-DL-0017730-24336-3-N or the corresponding native sample, D3-DL-0017730-24336-N, supporting AECOM's assertion that the detected substance was not present in the hydrant water.**

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water collected from Hydrant 222 does not contain DRO nor any other petroleum compounds. The original detection of DRO is most likely due to incidental contamination in the field or laboratory. Furthermore, this sample was a field duplicate, yet there was no evidence of TPH in either the initial Method 8015 or subsequent Tier 2 analyses of the native sample. The conclusion that the detection did not originate in the hydrant water is supported by the absence of DRO or any other hydrocarbon in the Tier 2 analysis of the sample. Regardless of source, the chromatographic data from (b) (4) confirms that the detected substance is not related to JP-5.

Questions regarding this letter should be addressed to the AECOM Project Manager, (b) (6)

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

Attachments
Attachment 1: Technical Discussion of Sample D3-DL-0017730-24336-3-N
Attachment 2: Chromatographic Interpretation of DRO and ORO Detections
Attachment 3: Glossary of Terms
Attachment 4: Tier 1 Evaluation, Sample D3-DL-0017730-24336-3-N
Attachment 5: (b) (4) Laboratory Report L2476242

Attachment 1: *Technical Review of Sample D3-DL-0017730-24336-3-N*

All associated field and laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have impacted the DRO result in sample D3-DL-0017730-24336-3-N. Items reviewed included:

- Method blank results
- Field duplicate results
- Blank spike (BS)/blank spike duplicate (BSD) recoveries
- Matrix spike (MS) recoveries
- Surrogate standard recoveries

DRO was not detected above the detection limit (DL) in either the method blank or field duplicate sample (D3-DL-0017730-24336-N). Associated results in the BS, BSD, MS, and surrogate standards, were within acceptance limits. The non-detect result in the field duplicate provides strong evidence that the detection did not originate from the site sample.

The chromatogram for D3-DL-0017730-24336-3-N was reviewed following the procedure outlined in Appendix B, *Chromatographic Interpretation of DRO and ORO Detections*. The sample chromatogram is shown in Figure 1. Figure 2 displays the chromatogram of the laboratory's retention time (RT) marker reference standard with each of the carbon numbers labeled and Figure 3 displays the laboratory's JP-5 standard chromatogram. As it can be difficult to compare peak patterns on separate chromatograms, the laboratory provided overlays of the sample with the RT marker standard (Figure 4), JP-5 (Figure 5), and the laboratory's DRO standard (Figure 6).

The sample chromatogram shows a complex mixture of resolved and unresolved discrete peaks in the C15-C24 carbon range. JP-5 elutes in the C10 to C16 range (Figure 3), so there is some overlap with the pattern of the substance found in the sample. However, examination of Figure 5, showing the overlay of the sample with JP-5, makes it obvious that the sample does not contain JP-5.

The pattern seen in the sample, an unresolved complex mixture (UCM) punctuated with discrete peaks, is similar to that seen in fuels. The most obvious explanation for its presence would be cross-contamination through incidental contact with the laboratory's DRO standard. However, the overlay shown in Figure 6 does not show an exact match, which would be expected if they came from the same source. It is possible that the sample was contaminated at the time of collection due to a fuel or light lubricant on the hydrant fitting or immediate vicinity, though laboratory contamination remains the most likely source.

Figure 1. Sample DA69622-9, D3-DL-0017730-24336-3-N

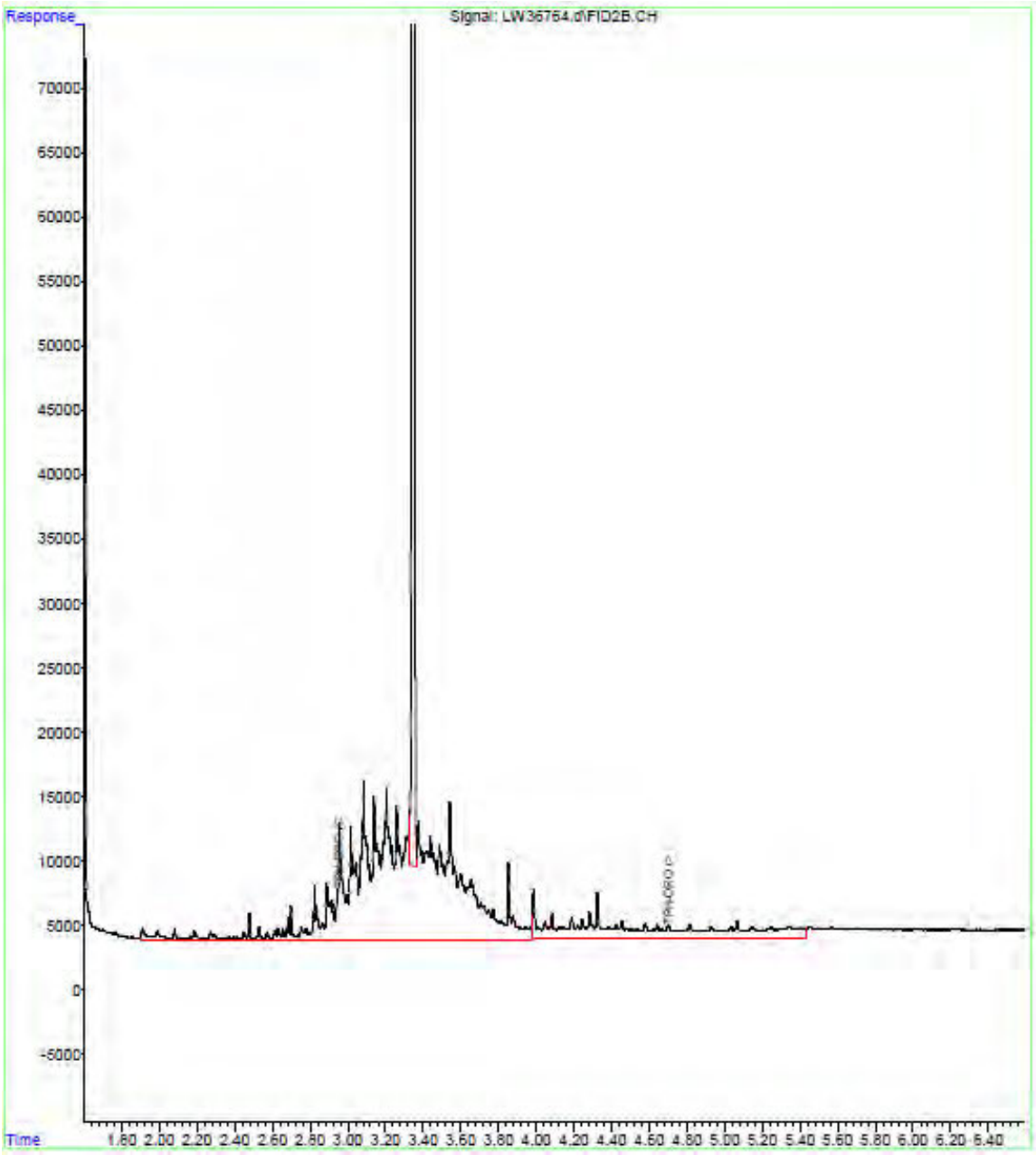


Figure 2. Retention Time Marker Standard with Carbon Numbers

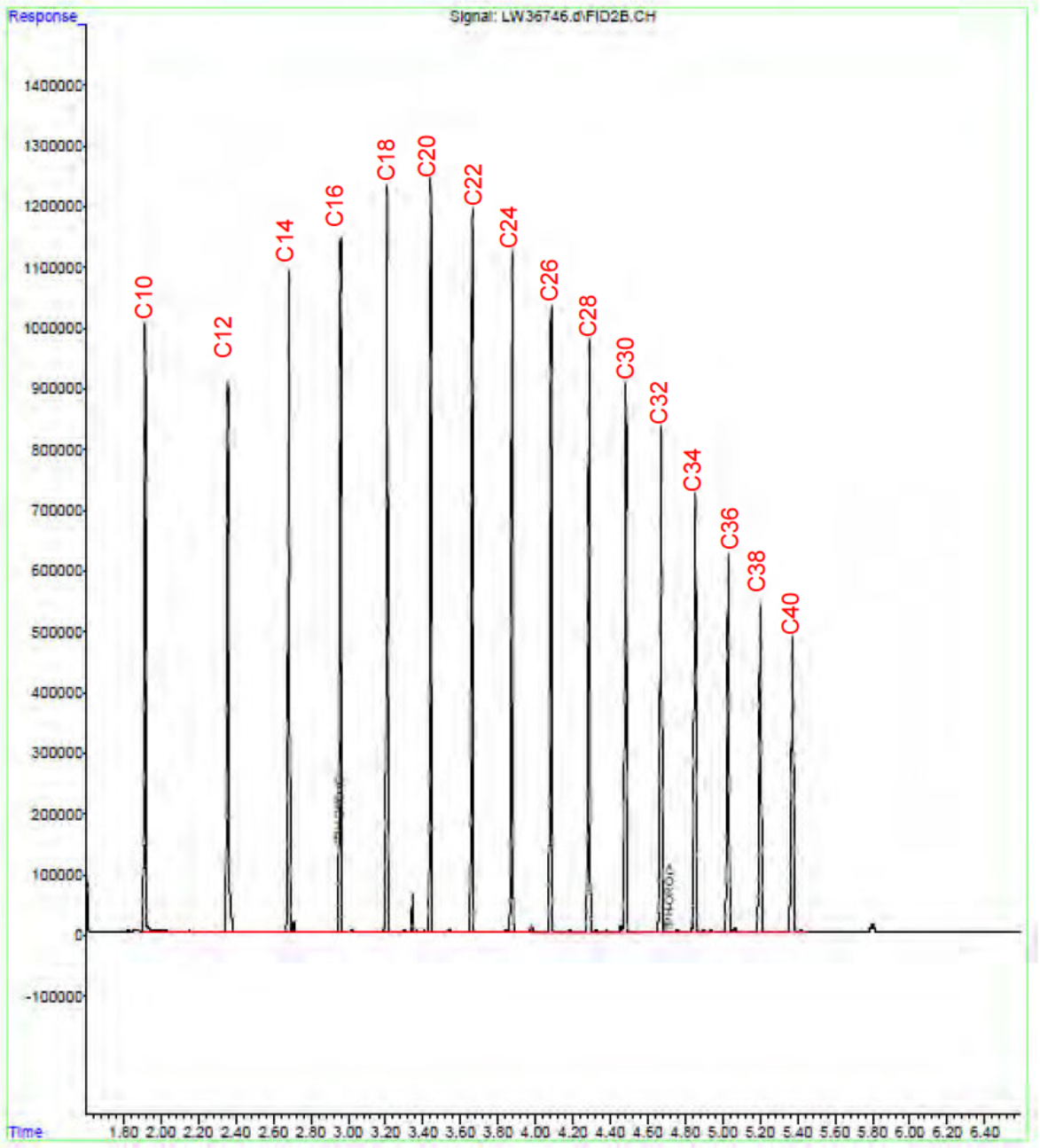


Figure 3. JP-5 Standard

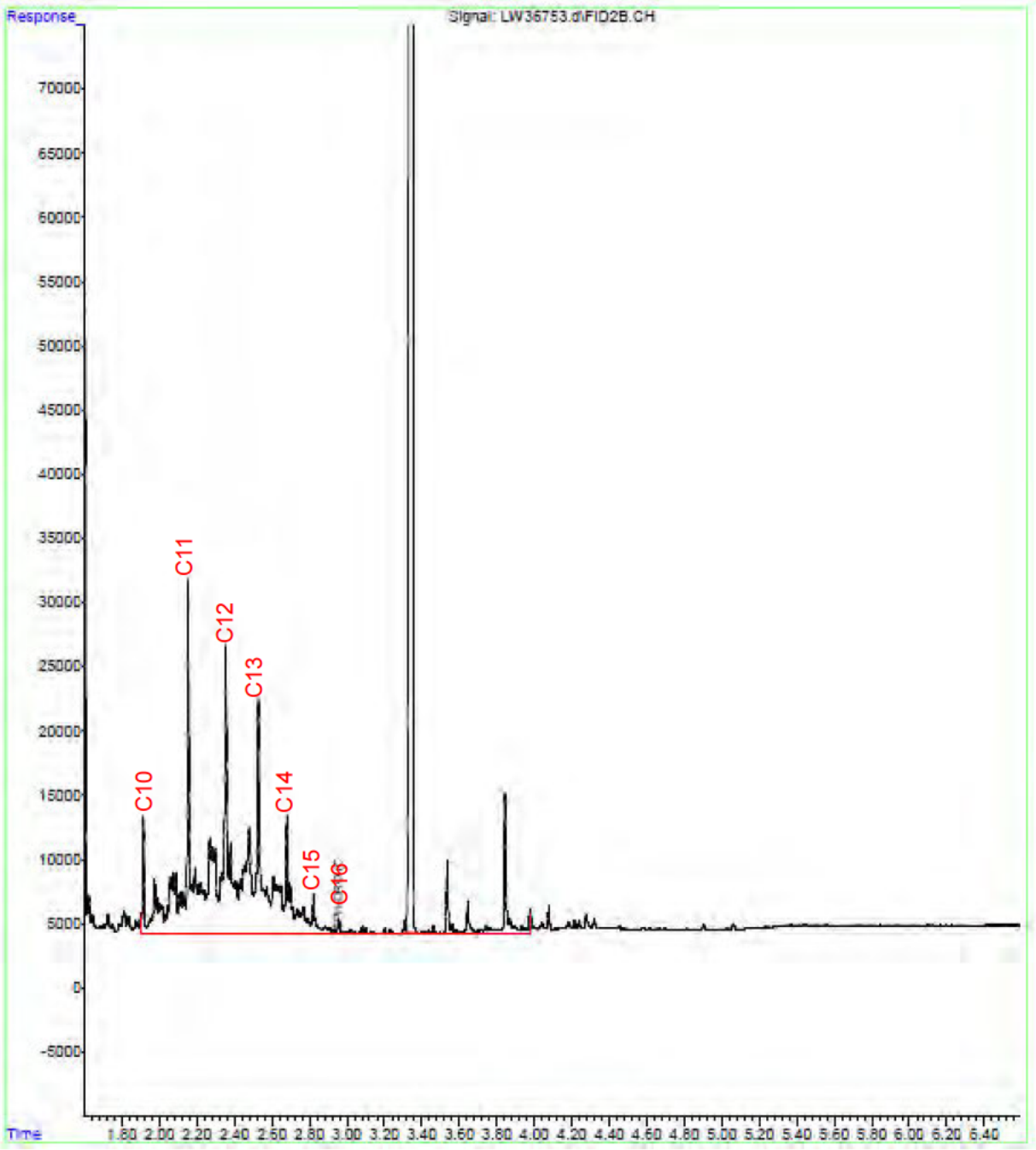


Figure 4. Sample DA69622-9, D3-DL-0017730-24336-3-N (black), Overlayed with RT Standard (blue)

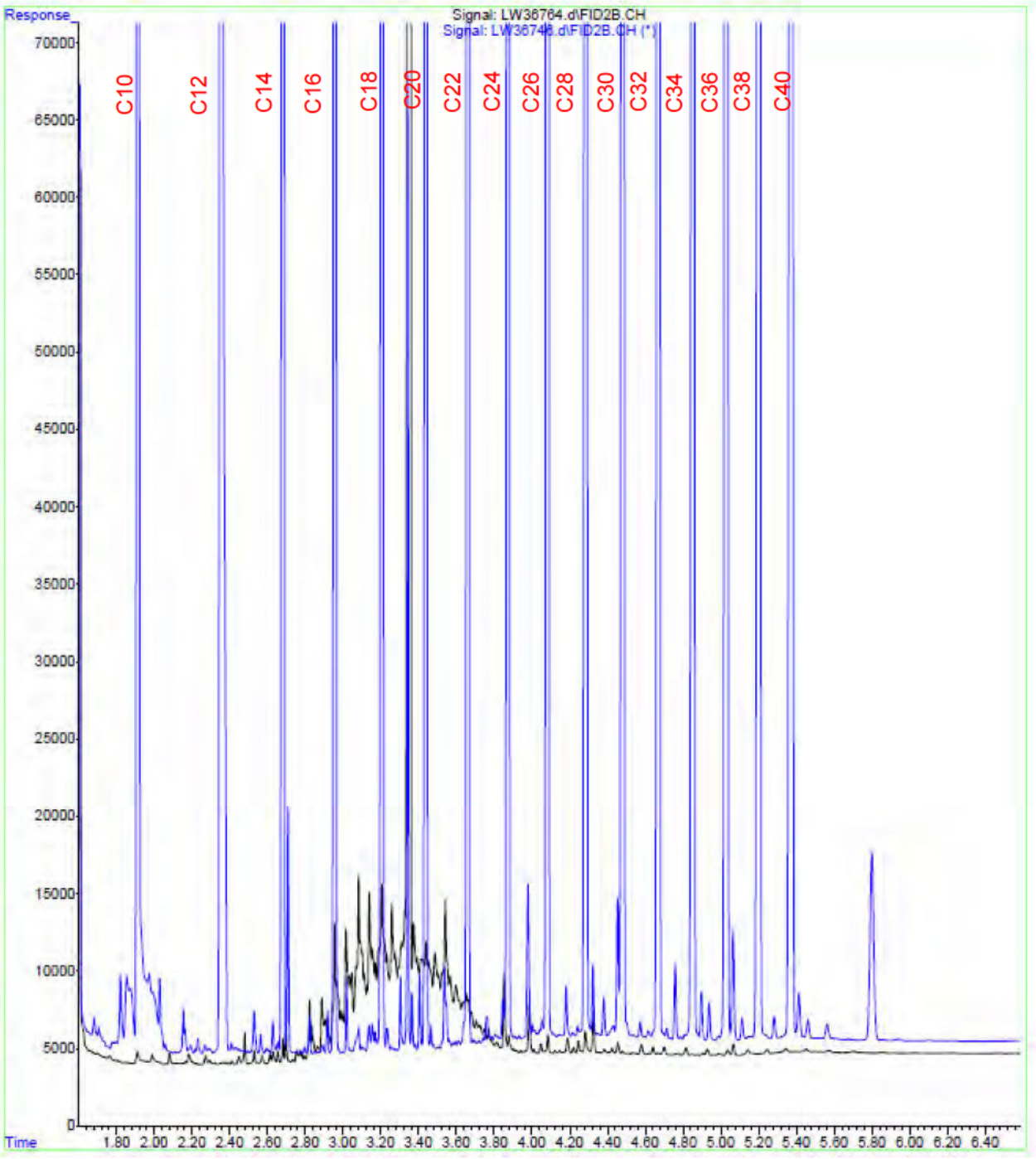


Figure 5. Sample DA69622-9, D3-DL-0017730-24336-3-N (black), Overlayed with JP-5 Standard (blue)

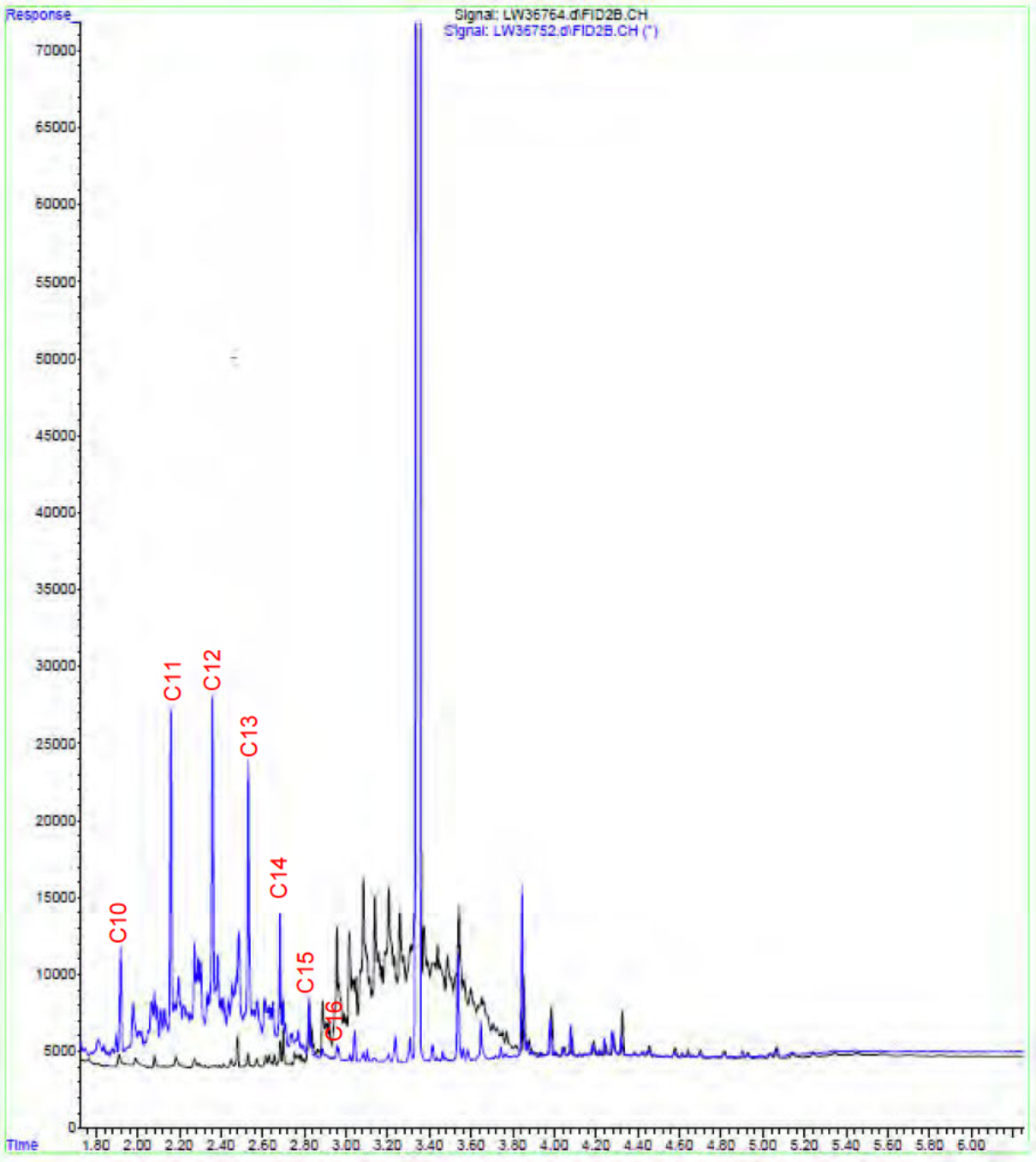
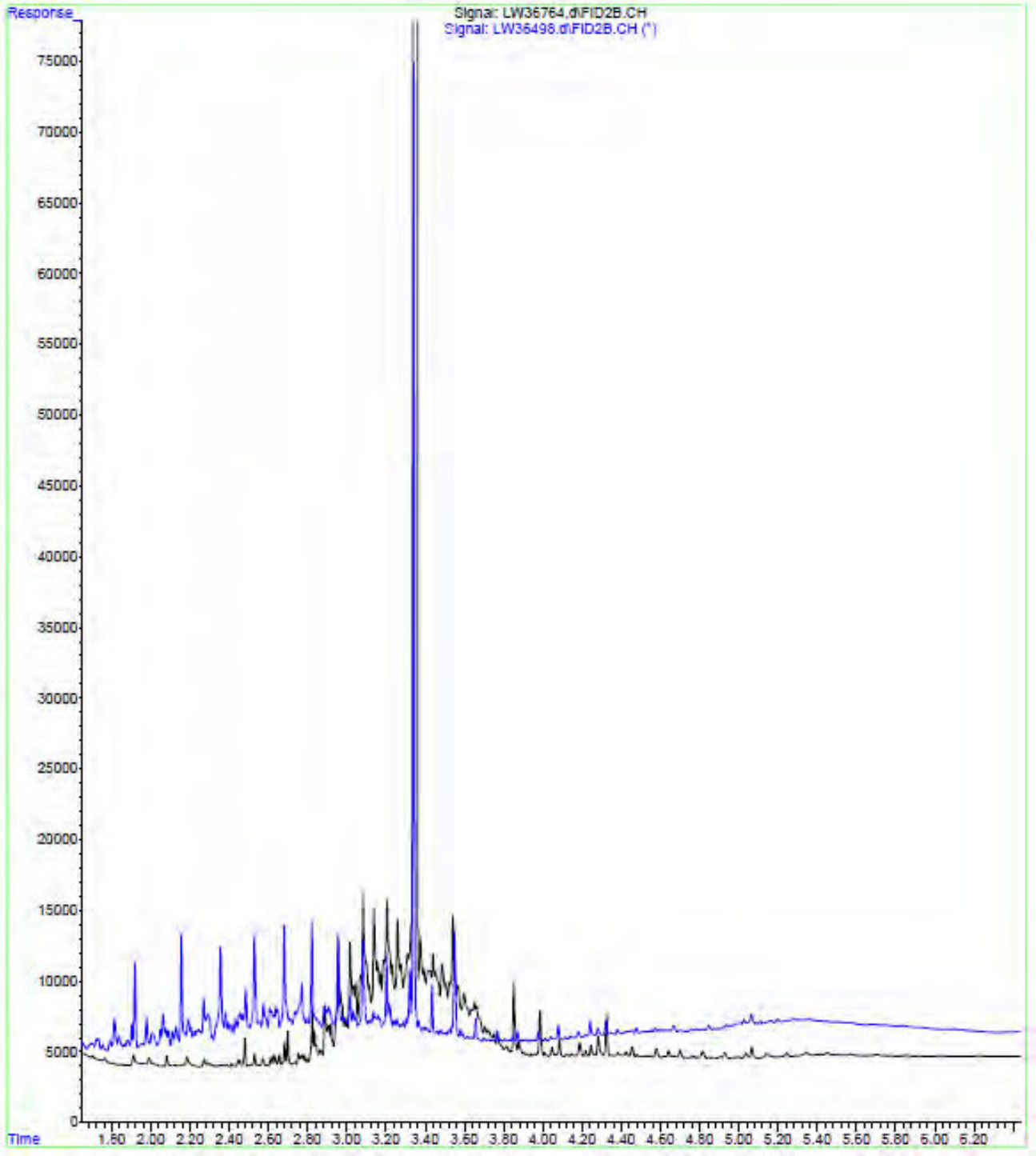


Figure 6. Sample DA69622-9, D3-DL-0017730-24336-3-N (black), Overlayed with DRO Standard (blue)



The sample extract was further evaluated using the Tier 1 mass spectral confirmation procedure outlined in the Extended Drinking Water Monitoring (EDWM) plan. The procedure entails analyzing the sample and associated method blank extracts obtained in the original extraction using full scan Gas Chromatograph and Mass Spectroscopy (GC/MS) via Method 8270. The resulting total ion chromatograms are evaluated as follows:

1) For the sample, retain all peaks that are above a 3:1 signal-to-noise (S:N) ratio.

2) For peaks retained from Step 1, retain all peaks that have a response greater than 5 times that found in the method blank.

3) Obtain the mass spectrum and perform a background subtraction (including all blank contamination present below the MRL/MDL) for each peak retained from Step 2.

4) Perform a Tentatively Identified Compound (TIC) search evaluation on each peak retained from Step 3 by comparing the corrected mass spectrum to a National Institute of Standards and Technology (NIST) mass spectral library. Retain the top 5 probability matches for each. Retain a list of all TICs with an 80% probability match or higher.

5) Evaluate chromatograms, Extraction Limited Ion Profile Screening (ELIPS), and additional chemistry data from the laboratory to determine if the detected TPH is JP-5/other fuel-related analytes or is associated TPH-O, and/or with “naturally occurring” hydrocarbons.

The results of this evaluation further support the conclusion that the TPH detection is due to the presence of artifacts introduced in the laboratory. The ELIPS selected ion chromatogram reviews did not indicate the presence of specific known fresh or weathered fuel products. The detection of trace n-alkanes and an unresolved complex mixture (UCM) of saturated hydrocarbons in the C14-C23 carbon range may indicate a light lubricating oil. The presence of possible phthalate esters, squalene, and many siloxanes indicates that accidental contamination from skin or laboratory glove contact during laboratory sample preparation is the most likely cause of the DRO and ORO detections.

Sample volume for both the native and field duplicate samples was submitted to Pace Analytical in Mansfield, MA for the Tier 2 analyses identified in the EDWM plan, specifically PIANO Volatile Organics by SW-846 Method 8260D, Parent and Alkylated Polyaromatic Hydrocarbons (P&A PAHs) by SW-846 Method 8270E with selected ion monitoring (SIM), and Saturated Hydrocarbons (SHCs) by SW-846 Method 8015D (modified). All results were non-detect in all analyses for both samples. The complete lack of any C9-C40 hydrocarbon detections or unresolved complex mixture supports the conclusion that the original detection was the result of incidental contamination in the field or laboratory, and not from the sampled hydrant water.

AECOM has concluded that the chromatographic evidence from the original, Tier 1, and Tier 2 analyses points to incidental contamination of the original sample with a mixture of compounds unrelated to JP-5 or any other fuel product. It is not known with certainty whether the artifact was introduced in the field or in the laboratory; however, AECOM concludes that the most likely source was incidental contact in the laboratory during sample preparation.

There is no evidence of a systematic contamination issue in the laboratory. Method blanks have been free of DRO and ORO detections, and laboratory contamination has been suspected in fewer than five of the more than 2000 samples collected under EDWM to date. (b) (4) laboratory management regularly reviews good laboratory practices, including steps necessary to minimize incidental contamination, with laboratory personnel. No additional action is recommended at this time.

Appendix C. Tier 1 Analysis Tech Memos

Attachment 2: Chromatographic Interpretation of DRO and ORO Detections

Appendix C. Tier 1 Analysis Tech Memos

Chromatographic Interpretation of DRO and ORO Detections

Gather the following chromatograms

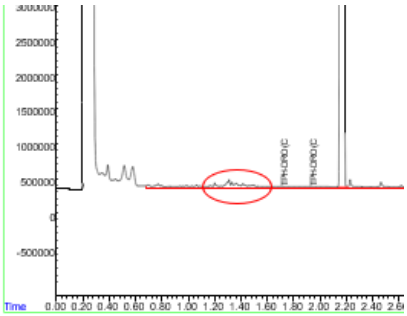
1) Sample of interest (with quantitation report)
2) Method blank (with quantitation report)
3) Retention time standard – must be analyzed in the same analytical batch as the sample
4) JP-5 standard - must be analyzed in the same analytical batch as the sample
5) DRO (Diesel Fuel #2) and/or ORO (Motor Oil) calibration standards

Comparison with JP-5, DRO, and ORO Standards

1) Label the carbon numbers of the prominent n-alkanes in the JP-5 and Diesel Fuel #2 standards, using the retention time (RT) standard provided in the data package as a guide.
2) Examine the sample chromatogram in the RT window corresponding to the first and last n-alkanes identified in the JP-5 and Diesel Fuel standards (C-10 to C-20).
    a. If the RTs of any of the peaks correspond to the n-alkanes identified in either standard, label them with the appropriate carbon numbers.
    b. Make note of which alkanes may be present based on RT and those which seem to be missing, e.g., C-12 RT match; no evidence of C-10, C-11, C-13 through C-20.
    c. If none of the n-alkanes are presumptively present, it is extremely unlikely that observed peaks are fuel related. If a fuel related hydrocarbon mixture is present, the largest peaks in a given region would be the n-alkanes.
3) Although JP-5 components do not extend into the ORO range of >C-24 – C-40, compare all peaks in the sample chromatogram with the RTs of the n-alkanes. Discrete peaks are not as evident in the Motor Oil standard, so the RTs from the retention time standard are used as a guide.

Comparison with Method Blank (MB)

1) Review the MB quantitation report to determine if DRO and/or ORO were detected. The quantitation report will include detections that are below the MDL and reported as non-detect by the laboratory as well as concentrations above the MDL that are reported by the laboratory.
2) Compare the concentration of the MB to the samples. Sample results that are within two to three times the concentration in the MB may be entirely attributable to batch contamination.
3) Review the MB chromatogram, looking for peaks eluting in the same retention time range as the standards.
    a. If the RTs of any of the peaks correspond to the n-alkanes identified in the reference standards, label the carbon numbers.
    b. Look for distinguishable peak patterns. For example, many method blanks have been found to contain the following grouping of peaks falling roughly between 1.04 and 1.56 minutes.



(Note that retention times are specific to a given instrument under a particular set of operating conditions. It is essential that all comparisons of retention times and patterns be done under identical conditions.)

c. Look for the same pattern in the associated samples. While it is not possible to determine the areas of individual portions of the chromatograms from the data package, a rough assessment of the relative magnitude can be made.

Additional Qualitative Assessment

1) Review the sample chromatograms looking for distinct peaks or groupings of peaks as discussed in the MB evaluation, above.
2) If found, look to see if the same peaks/patterns are present in the chromatograms of other samples prepared and analyzed in the same batch. Note that a batch may contain samples reported in multiple sample delivery groups (SDGs). All samples from the batch should be reviewed.

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile - A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic– Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO - An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit - The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

Attachment 4: Tier 1 Evaluation, Sample D3-DL-0017730-24336-3-N

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

01/02/25

The results set forth herein are provided by (b) (4)

e-Hardcopy 2.0
Automated Report

Technical Report for

(b) (4)

AECOMHIH: N6274224F0139

AECOMHIH28355

(b) (4) Job Number: DA69622T

Sampling Date: 12/24/24

Report to:

(b) (4)

Total number of pages in report: 205

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

(b) (6)
Technical Director

Client Service contact: (b) (6)
(b) (4)

This report shall not be reproduced, except in its entirety, without the written approval of (b) (4)
Test results relate only to samples analyzed.

(b) (4)

(b) (4) is the sole authority for authorizing edits or modifications to this document.
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Sections: 1 2 3 4 5 6 7

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(b) (4)

Sample Summary

(b) (4)

Job No: DA69622T

AECOMHIH: N6274224F0139
Project No: AECOMHIH28355

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
DA69622-1T	12/24/24	09:55	(b) (6)	12/25/24	AQ	Water	OP26910-MB
DA69622-9T	12/24/24	10:37	(b) (6)	12/25/24	AQ	Water	D3-DL-0017730-24336-3-N

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: (b) (4) **Job No:** DA69622T

Site: AECOMHIH: N6274224F0139 **Report Date** 1/1/2025 9:23:57 AM

On 12/25/2024, 2 sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at (b) (4) . The samples were intact and properly preserved, unless noted below. An (b) (4) Job Number of DA69622T was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method SW846 8270E

Matrix: AQ **Batch ID:** OP60630

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA69622-1T, DA69622-9T have surrogates outside control limits. Surrogate not evaluated
- OP60630-MB1: Tier 1 - ELIPS
- OP60630-BS1: Tier 1 - ELIPS
- OP60630-MB1 for Terphenyl-d14: Surrogate not evaluated
- OP60630-BS1 for Terphenyl-d14: Surrogate not evaluated

(b) (4) certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting (b) (4) Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

(b) (4) is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by (b) (4) indicated via signature on the report cover.

Summary of Hits

Job Number: DA69622T
Account: (b) (4)
Project: AECOMHIH: N6274224F0139
Collected: 12/24/24

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

DA69622-1T **OP26910-MB**

No hits reported in this sample.

DA69622-9T **D3-DL-0017730-24336-3-N**

No hits reported in this sample.

(b) (4)

Sample Results

Report of Analysis

(b) (4)

Report of Analysis

Client Sample ID:	OP26910-MB		
Lab Sample ID:	DA69622-1T	**Date Sampled:**	12/24/24
Matrix:	AQ - Water	**Date Received:**	12/25/24
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	n/a
Project:	AECOMHIH: N6274224F0139		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	E3E126470.D	1	12/31/24 12:06	(b) (6)	12/31/24 08:00	OP60630	E3E5885
Run #2							

	Initial Volume	Final Volume
Run #1	1.0 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1718-51-0	Terphenyl-d14	0% [b]		10-127%

(a) Tier 1 - ELIPS
(b) Surrogate not evaluated

U = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

(b) (4) .

Report of Analysis

Client Sample ID:	D3-DL-0017730-24336-3-N		
Lab Sample ID:	DA69622-9T	**Date Sampled:**	12/24/24
Matrix:	AQ - Water	**Date Received:**	12/25/24
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	n/a
Project:	AECOMHIH: N6274224F0139		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	E3E126471.D	1	12/31/24 12:39	(b) (6)	12/31/24 08:00	OP60630	E3E5885
Run #2							

	Initial Volume	Final Volume
Run #1	1.0 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1718-51-0	Terphenyl-d14	0% [b]		10-127%

(a) Tier 1 - ELIPS
(b) Surrogate not evaluated

U = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

(b) (4)

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

(b) (4)

Internal Sample Tracking Chronicle

(b) (4)

Job No: DA69622T

AECOMHIH: N6274224F0139
Project No: AECOMHIH28355

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
DA69622-1T	Collected: 24-DEC-24 09:55 By: (b) (6)			Received: 25-DEC-24 By: (b) (6)		
OP26910-MB						
DA69622-1T	SW846 8270E	31-DEC-24 12:06	(b) (6)	31-DEC-24	JS	AB8270SL
DA69622-9T	Collected: 24-DEC-24 10:37 By: (b) (6)			Received: 25-DEC-24 By: (b) (6)		
D3-DL-0017730-24336-3-N						
DA69622-9T	SW846 8270E	31-DEC-24 12:39	(b) (6)	31-DEC-24	JS	AB8270SL

(b) (4)

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: DA69622T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP60630-MB1 [a]	E3E126466.D	1	12/31/24	(b)(6)	12/31/24	OP60630	E3E5885

The QC reported here applies to the following samples: **Method:** SW846 8270E

DA69622-1T, DA69622-9T

CAS No.	Compound	Result	RL	MDL	Units	Q

CAS No.	Surrogate Recoveries		Limits
1718-51-0	Terphenyl-d14	0%* [b]	10-127%

(a) Tier 1 - ELIPS
(b) Surrogate not evaluated

Blank Spike Summary

Job Number: DA69622T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP60630-BS1 [a]	E3E126469.D	1	12/31/24	(b)(6)	12/31/24	OP60630	E3E5885

The QC reported here applies to the following samples: **Method:** SW846 8270E

DA69622-1T, DA69622-9T

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1718-51-0	Terphenyl-d14	0%* [b]	10-127%

(a) Tier 1 - ELIPS
(b) Surrogate not evaluated

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: DA69622T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Method: SW846 8270E **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
DA69622-1T	E3E126470.D	0* [a]
DA69622-9T	E3E126471.D	0* [a]
OP60630-BS1	E3E126469.D	0* [a]
OP60630-MB1	E3E126466.D	0* [a]

Surrogate Compounds	Recovery Limits
S1 = Terphenyl-d14	10-127%

(a) Surrogate not evaluated

Run Sequence Report

Job Number: DA69622T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Run ID: E3E5885	**Method:** SW846 8270E	**Instrument ID:** GCMS3E

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP60630-MB1	E3E126466.D	12/31/24 08:24	OP60630	Method Blank
OP60630-BS1	E3E126469.D	12/31/24 10:49	OP60630	Blank Spike
DA69622-1T	E3E126470.D	12/31/24 12:06	OP60630	OP26910-MB
DA69622-9T	E3E126471.D	12/31/24 12:39	OP60630	D3-DL-0017730-24336-3-N

(b) (4)

MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 01 06:36:56 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	10.121	230	32692557m	32692557.00		0.00
Target Compounds						Qvalue
53) Siloxane	7.869	429	97297m	97297.00		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

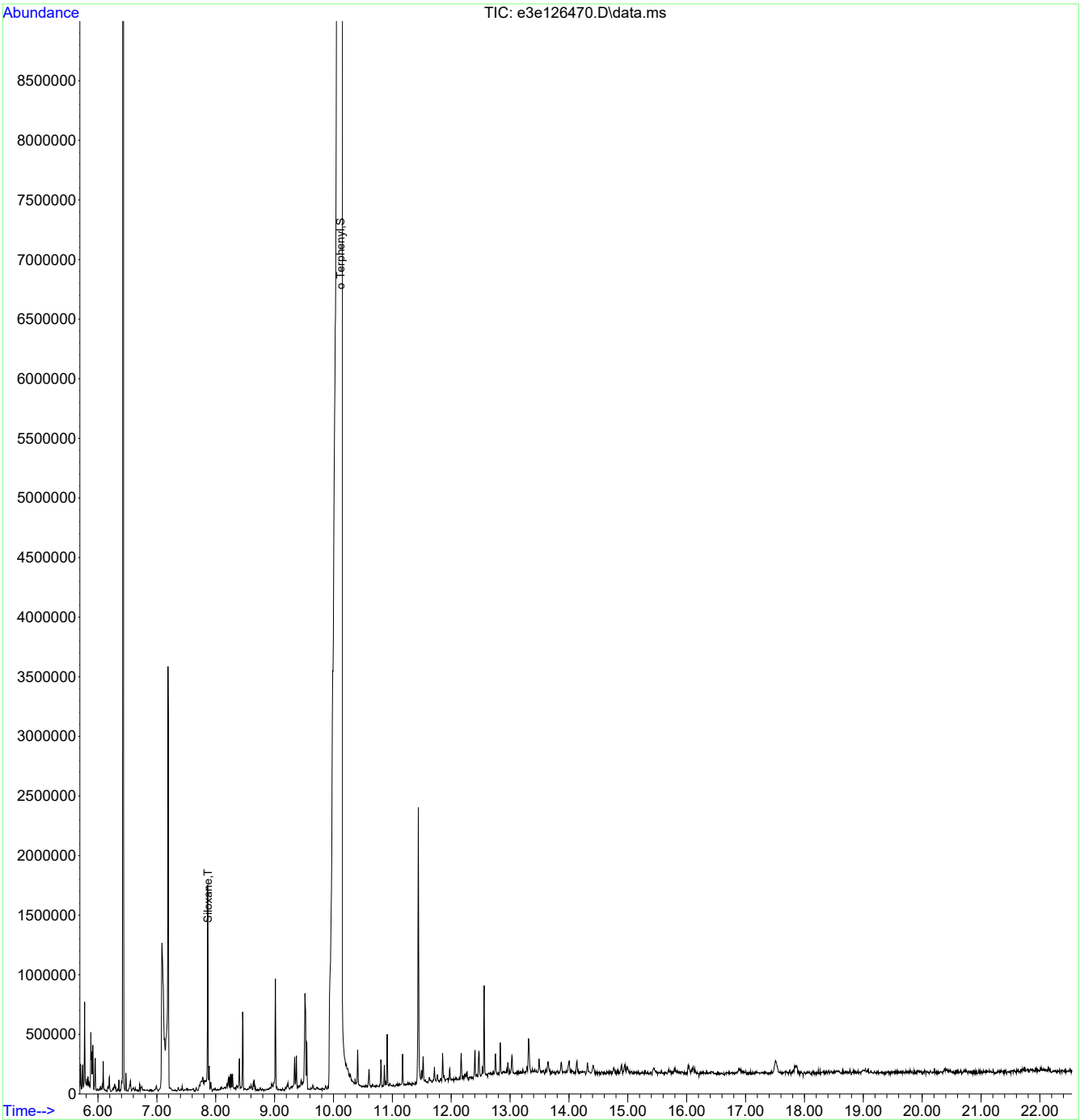
7.1.1

7

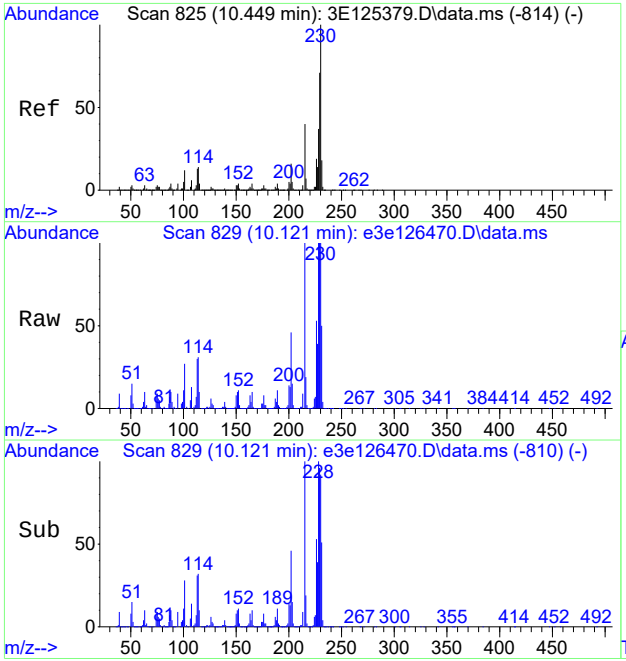
Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 01 06:36:56 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



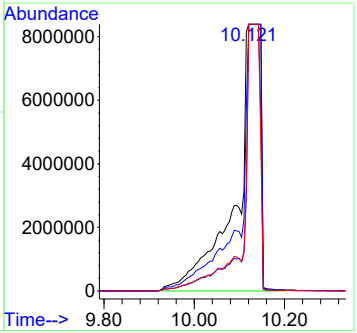
(b) (4)

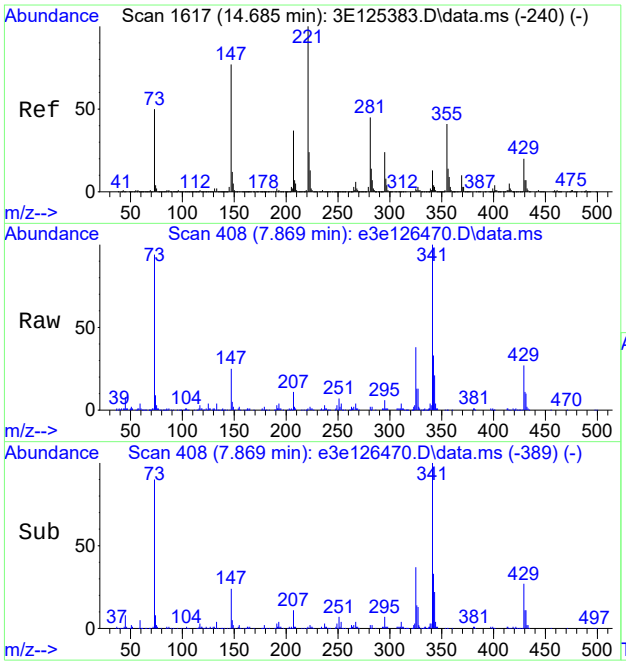


#26
o-Terphenyl
Concen: 32692557.00 m
RT: 10.121 min Scan# 829
Delta R.T. -0.000 min
Lab File: e3e126470.D
Acq: 31 Dec 2024 12:06 pm

Tgt Ion:230 Resp:32692557

Ion	Ratio	Lower	Upper
230	100		
229	7.0	43.0	83.0#
228	7.3	27.3	67.3#
215	7.3	30.0	70.0#

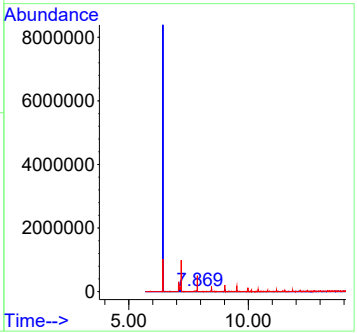




#53
Siloxane
Concen: 97297.00 m
RT: 7.869 min Scan# 408
Delta R.T. -0.000 min
Lab File: e3e126470.D
Acq: 31 Dec 2024 12:06 pm

Tgt Ion:429 Resp: 97297

Ion	Ratio	Lower	Upper
429	100		
355	0.0	0.0	20.0
281	2.7	0.0	20.0
73	327.1	0.0	20.0#



LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126470.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.553	155	162	165	rVB5	88269	118947	0.03%	0.024%
2	6.607	165	172	175	rBV7	26826	43225	0.01%	0.009%
3	6.708	188	191	193	rBV2	64489	47252	0.01%	0.009%
4	6.746	194	198	204	rVV8	40537	65932	0.02%	0.013%
5	6.842	214	216	221	rVB6	11895	15307	0.00%	0.003%
6	6.890	221	225	229	rBV7	12744	17622	0.00%	0.004%
7	6.992	233	244	250	rBV7	45607	86457	0.02%	0.017%
8	7.088	250	262	272	rBV2	1243054	3265043	0.79%	0.654%
9	7.190	273	281	286	rVB	3539779	3735650	0.90%	0.748%
10	7.366	309	314	318	rBV4	31330	38849	0.01%	0.008%
11	7.430	324	326	330	rVB2	42002	32873	0.01%	0.007%
12	7.511	337	341	343	rVV5	17135	16727	0.00%	0.003%
13	7.618	358	361	364	rVB5	22241	24283	0.01%	0.005%
14	7.671	367	371	376	rBV8	30649	40822	0.01%	0.008%
15	7.757	376	387	388	rBV9	78691	192604	0.05%	0.039%
16	7.778	389	391	395	rVB3	58643	63494	0.02%	0.013%
17	7.821	395	399	401	rBV5	29455	50158	0.01%	0.010%
18	7.864	403	407	410	rVV	1640811	1094606	0.26%	0.219%
19	7.917	415	417	421	rVB3	74619	63375	0.02%	0.013%
20	7.976	421	428	430	rBV8	21548	35557	0.01%	0.007%
21	8.083	446	448	450	rBV3	21266	18993	0.00%	0.004%
22	8.104	450	452	456	rVV5	20125	19047	0.00%	0.004%
23	8.153	456	461	462	rVV4	16704	23012	0.01%	0.005%
24	8.190	465	468	470	rVV4	46024	46854	0.01%	0.009%
25	8.217	470	473	475	rVV3	92515	89511	0.02%	0.018%
26	8.238	475	477	479	rVV	100772	72954	0.02%	0.015%
27	8.260	479	481	484	rVV2	122350	103540	0.02%	0.021%
28	8.286	484	486	490	rVB	124578	90814	0.02%	0.018%
29	8.356	495	499	503	rVV7	34945	57941	0.01%	0.012%
30	8.404	503	508	512	rVV2	260908	241716	0.06%	0.048%
31	8.457	514	518	522	rVB	653832	513863	0.12%	0.103%
32	8.495	523	525	532	rVB8	14384	19134	0.00%	0.004%
33	8.575	537	540	543	rBV5	24676	25601	0.01%	0.005%
34	8.602	543	545	550	rVB6	43236	42452	0.01%	0.009%
35	8.655	550	555	557	rBV2	85863	99760	0.02%	0.020%
36	8.757	569	574	578	rBV8	27040	36149	0.01%	0.007%
37	8.794	578	581	585	rVB6	18531	22497	0.01%	0.005%
38	8.832	585	588	591	rBV5	14416	16817	0.00%	0.003%
39	8.912	600	603	604	rVV3	19366	16895	0.00%	0.003%
40	8.950	605	610	614	rVV8	55044	93107	0.02%	0.019%

AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:08 2025

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	9.014	614	622	630	rVB	934988	782137	0.19%	0.157%
42	9.137	641	645	649	rBV7	20722	22922	0.01%	0.005%
43	9.185	649	654	656	rBV6	25842	28138	0.01%	0.006%
44	9.228	656	662	667	rVB7	53989	75750	0.02%	0.015%
45	9.340	678	683	686	rVV2	281188	286420	0.07%	0.057%
46	9.372	686	689	692	rVV	289003	250462	0.06%	0.050%
47	9.399	692	694	697	rVV4	38030	48790	0.01%	0.010%
48	9.452	698	704	707	rVV8	85217	147802	0.04%	0.030%
49	9.516	707	716	720	rVV2	809370	1274040	0.31%	0.255%
50	9.543	720	721	726	rVV	399998	294744	0.07%	0.059%
51	9.618	733	735	738	rBV4	18612	17941	0.00%	0.004%
52	9.650	738	741	749	rVB8	38396	46431	0.01%	0.009%
53	9.714	749	753	763	rBV8	18138	42358	0.01%	0.008%
54	9.816	770	772	776	rBV5	18079	24385	0.01%	0.005%
55	9.864	778	781	786	rBV7	32721	33984	0.01%	0.007%
56	9.902	786	788	790	rBV3	27967	23651	0.01%	0.005%
57	10.089	790	823	825	rBV2	13928578	62211934	15.01%	12.462%
58	10.142	826	833	858	rVB4	321206848	414536242	100.00%	83.040%
59	10.367	873	875	878	rVV4	46033	27799	0.01%	0.006%
60	10.410	879	883	891	rVB	302027	280388	0.07%	0.056%
61	10.549	906	909	912	rBV5	21884	21050	0.01%	0.004%
62	10.602	914	919	926	rVB7	149509	167616	0.04%	0.034%
63	10.666	928	931	935	rVB6	22554	23797	0.01%	0.005%
64	10.805	953	957	961	rVB2	228532	203078	0.05%	0.041%
65	10.864	964	968	971	rVV2	179445	122555	0.03%	0.025%
66	10.886	971	972	974	rVV2	41774	30214	0.01%	0.006%
67	10.912	974	977	982	rVB	433875	306163	0.07%	0.061%
68	11.068	1003	1006	1009	rBV5	16765	16488	0.00%	0.003%
69	11.126	1014	1017	1019	rBV4	17149	16774	0.00%	0.003%
70	11.175	1021	1026	1030	rVB	260445	206274	0.05%	0.041%
71	11.340	1055	1057	1059	rBV3	22939	17115	0.00%	0.003%
72	11.442	1069	1076	1083	rBV	2318018	2079777	0.50%	0.417%
73	11.495	1083	1086	1088	rVV2	97227	94606	0.02%	0.019%
74	11.522	1088	1091	1096	rVB	207617	193199	0.05%	0.039%
75	11.629	1107	1111	1113	rBV5	47385	47130	0.01%	0.009%
76	11.715	1124	1127	1132	rVB3	119109	101741	0.02%	0.020%
77	11.768	1133	1137	1142	rVB8	61174	75079	0.02%	0.015%
78	11.854	1150	1153	1161	rBV2	233704	244143	0.06%	0.049%
79	11.977	1172	1176	1182	rVB3	101312	102919	0.02%	0.021%
80	12.169	1208	1212	1216	rBV	223311	211075	0.05%	0.042%
81	12.405	1251	1256	1259	rBV2	226600	206261	0.05%	0.041%
82	12.469	1265	1268	1274	rBV3	211459	243140	0.06%	0.049%
83	12.528	1276	1279	1281	rVV4	79162	57942	0.01%	0.012%
84	12.560	1281	1285	1290	rVB	750010	582102	0.14%	0.117%
85	12.752	1317	1321	1328	rVB4	176703	191620	0.05%	0.038%

AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:08 2025

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	12.833	1332	1336	1341	rBV2	271444	240620	0.06%	0.048%
87	12.961	1358	1360	1364	rVB4	104768	94515	0.02%	0.019%
88	13.031	1369	1373	1381	rVB8	154550	200437	0.05%	0.040%
89	13.314	1423	1426	1436	rVB3	282415	377372	0.09%	0.076%
90	13.491	1456	1459	1465	rVB5	117131	125355	0.03%	0.025%
91	13.646	1484	1488	1497	rVB5	103114	185974	0.04%	0.037%
92	13.870	1526	1530	1534	rVB7	89332	116886	0.03%	0.023%
93	14.004	1550	1555	1560	rVB6	97227	135443	0.03%	0.027%
94	14.138	1575	1580	1583	rBV6	104469	135688	0.03%	0.027%
95	14.314	1609	1613	1623	rBV8	90549	121733	0.03%	0.024%
96	14.951	1728	1732	1736	rVB7	65134	93211	0.02%	0.019%
97	14.988	1736	1739	1746	rVB7	53957	88302	0.02%	0.018%
98	15.443	1819	1824	1832	rBV7	47623	110060	0.03%	0.022%
99	16.026	1930	1933	1941	rBV10	75295	155722	0.04%	0.031%
100	17.507	2205	2210	2223	rVB10	102840	299261	0.07%	0.060%

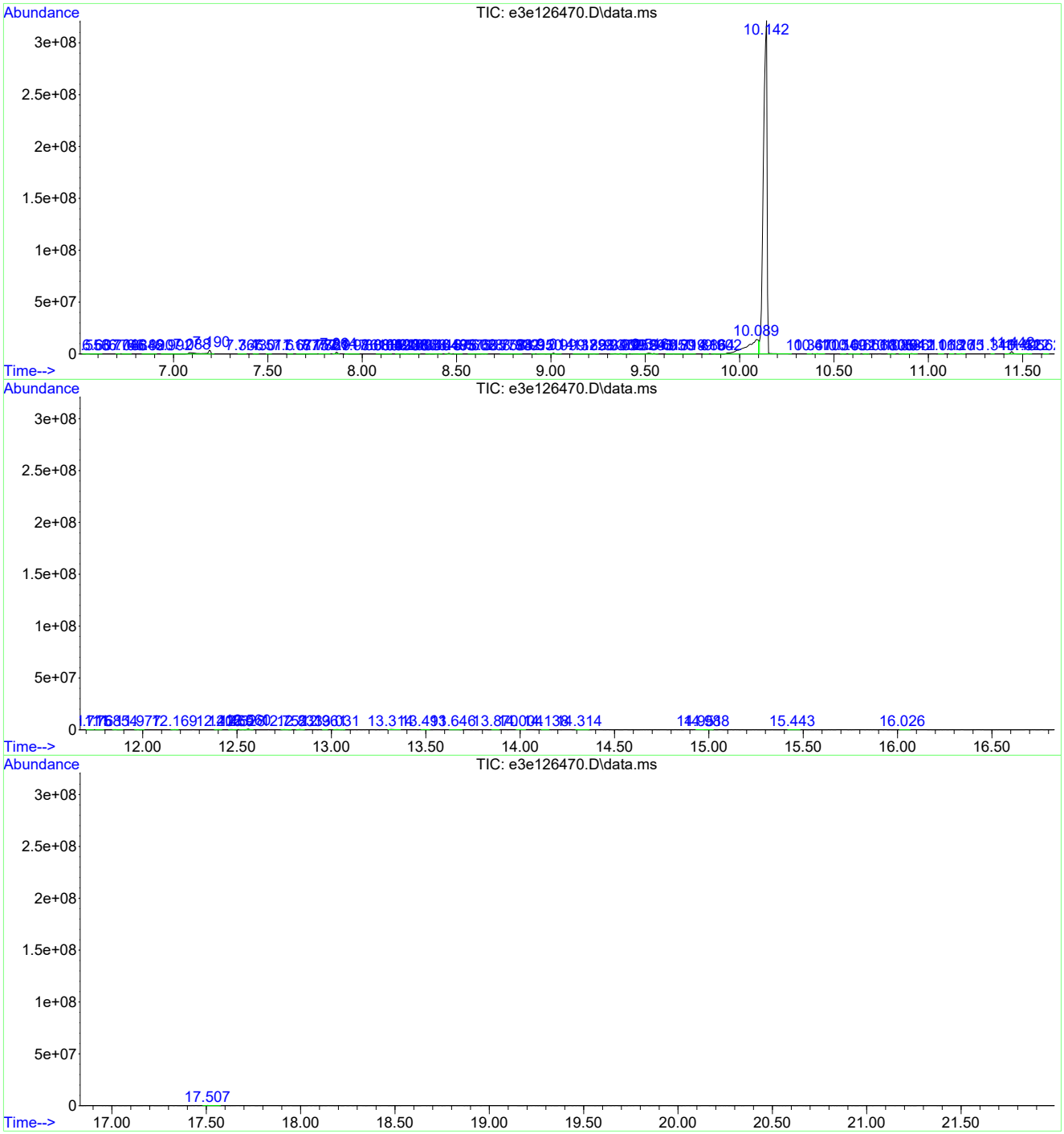
Sum of corrected areas: 499198195

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\J(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:09 2025 4

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

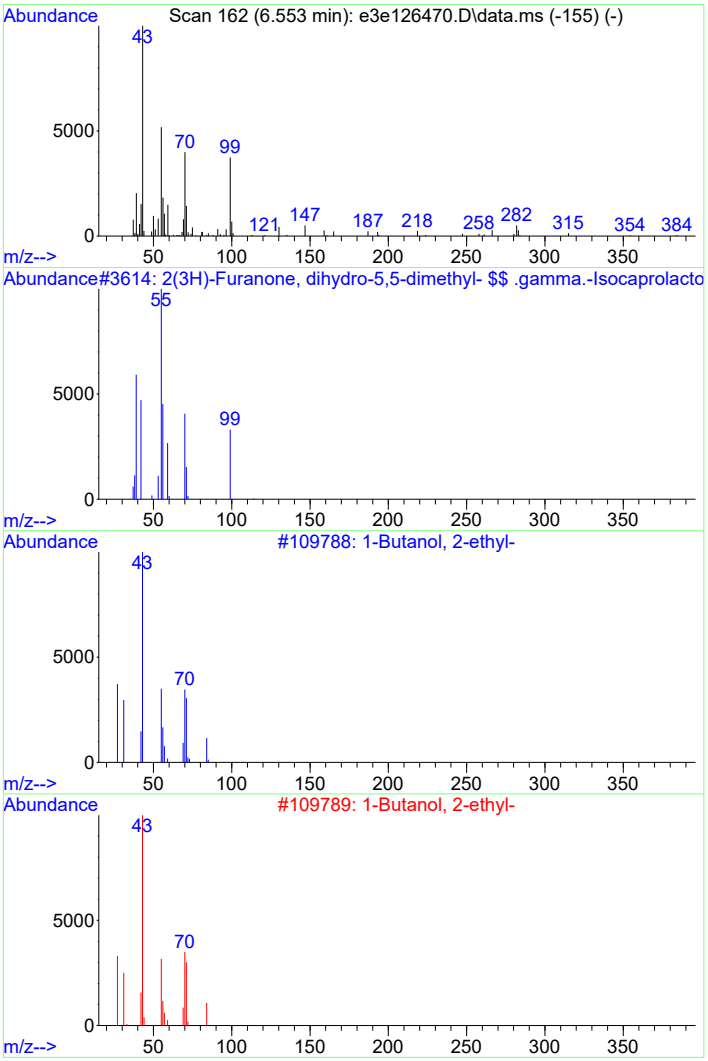
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

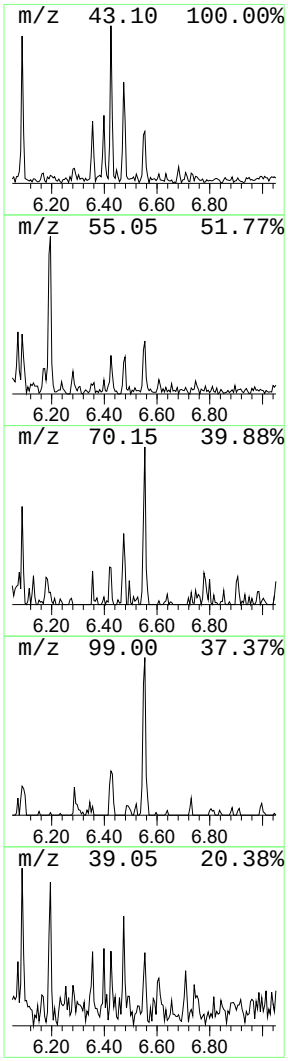
****

Peak Number 1 2(3H)-Furanone, dihydro-5,5... Concentration Rank 36

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.553	0.00	118947	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2(3H)-Furanone, dihydro-5,5-dime...	114	C6H10O2	003123-97-5	36
2	1-Butanol, 2-ethyl-	102	C6H14O	000097-95-0	35
3	1-Butanol, 2-ethyl-	102	C6H14O	000097-95-0	35
4	m-Dioxan-4-ol, 2,6-diethyl-5-met...	216	C11H20O4	092017-16-8	28
5	1-Butanol, 2-ethyl- $$ Pseudohex...	102	C6H14O	000097-95-0	25





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:10 2025 5

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

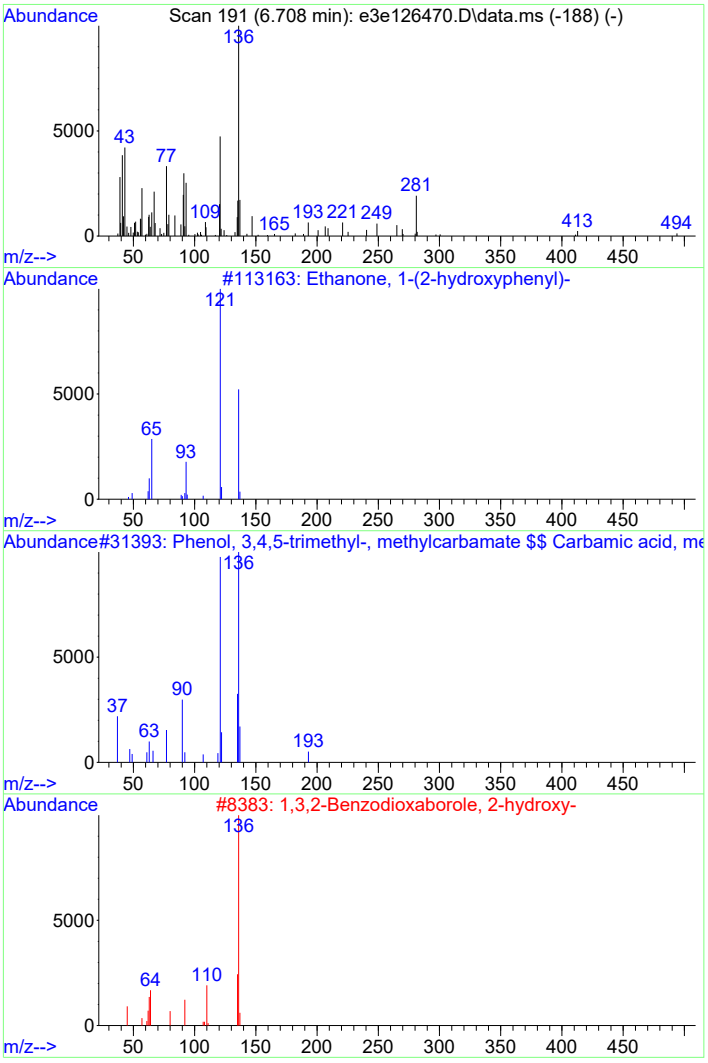
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

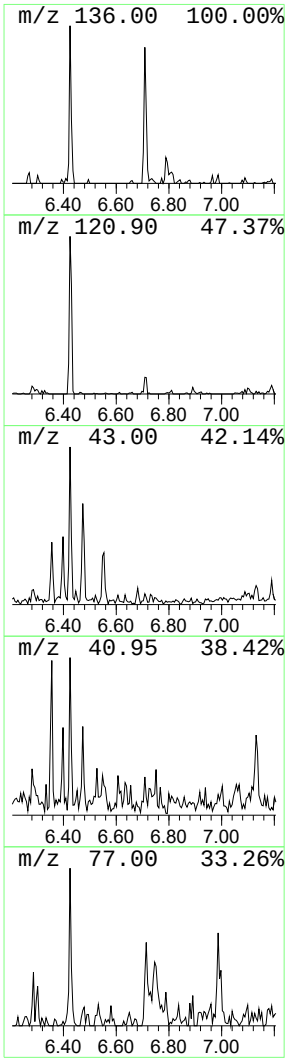
****

Peak Number 3 Ethanone, 1-(2-hydroxyphenyl)- Concentration Rank 59

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.708	0.00	47252	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethanone, 1-(2-hydroxyphenyl)-	136	C8H8O2	000118-93-4	47
2	Phenol, 3,4,5-trimethyl-, methyl...	193	C11H15NO2	002686-99-9	38
3	1,3,2-Benzodioxaborole, 2-hydroxy-	136	C6H5BO3	045770-13-6	36
4	2,3-Dimethylanisole	136	C9H12O	002944-49-2	35
5	Phenol, 2,3,6-trimethyl-	136	C9H12O	002416-94-6	32





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:11 2025 6

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

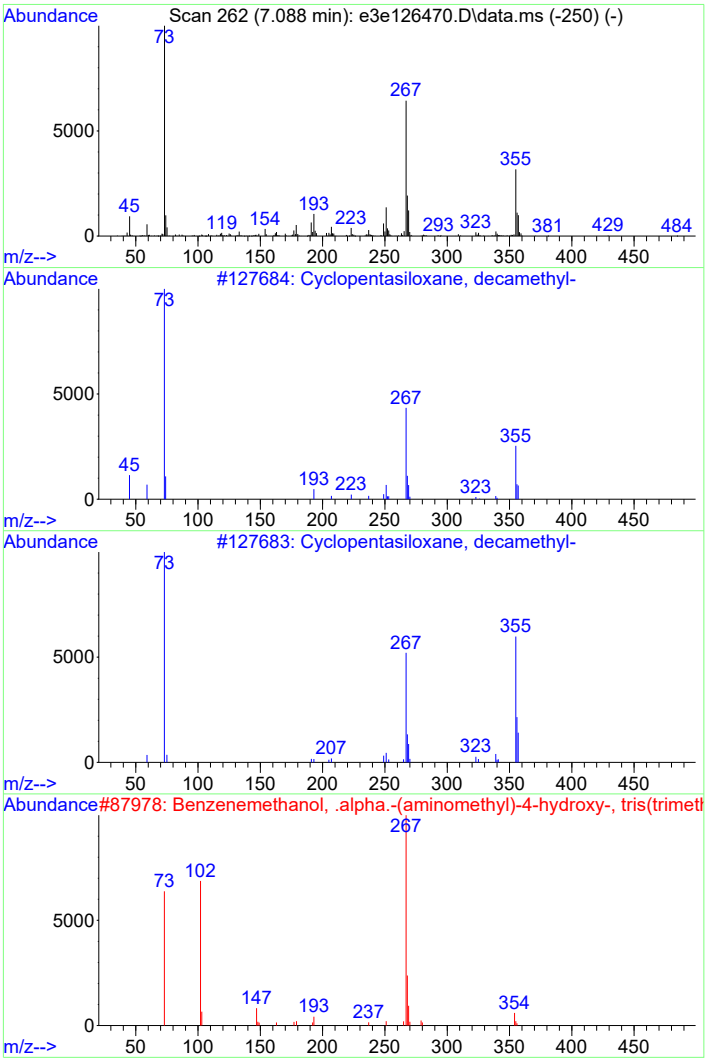
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

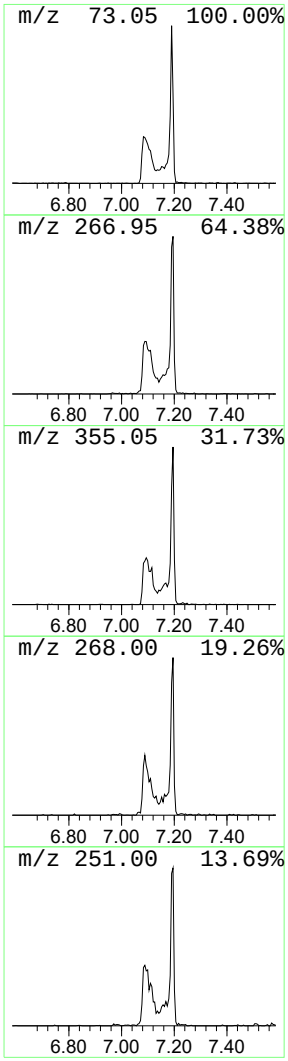
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 8 Cyclopentasiloxane, decamet... Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.088	0.00	3265040	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	91
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	80
3	Benzenemethanol, .alpha.-(aminom...	369	C17H35NO2Si3	056145-08-5	53
4	3-Hydroxymandelic acid, ethyl es...	340	C16H28O4Si2	000000-00-0	43
5	3-(3-Hydroxyphenyl)-3-hydroxypro...	354	C17H30O4Si2	000000-00-0	38





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:12 2025 7

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

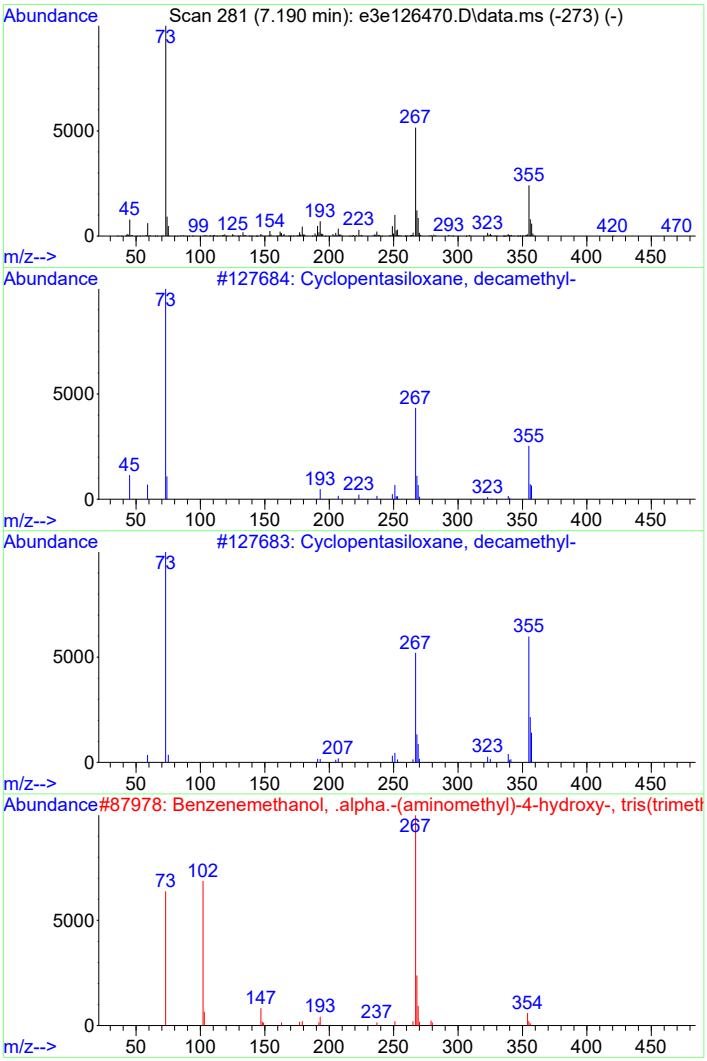
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

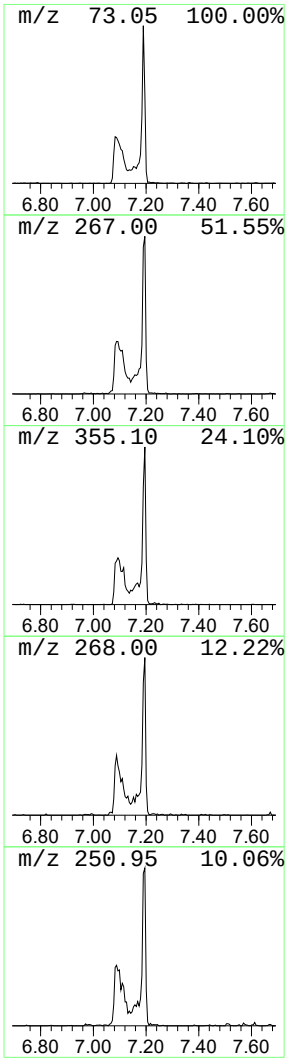
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 9 Cyclopentasiloxane, decamet... Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.190	0.00	3735650	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	90
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	86
3	Benzenemethanol, .alpha.-(aminom...	369	C17H35NO2Si3	056145-08-5	53
4	Butanamide, 2,2,3,3,4,4,4-heptaf...	493	C18H26F7NO3Si2	055471-01-7	43
5	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	43





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:12 2025 8

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

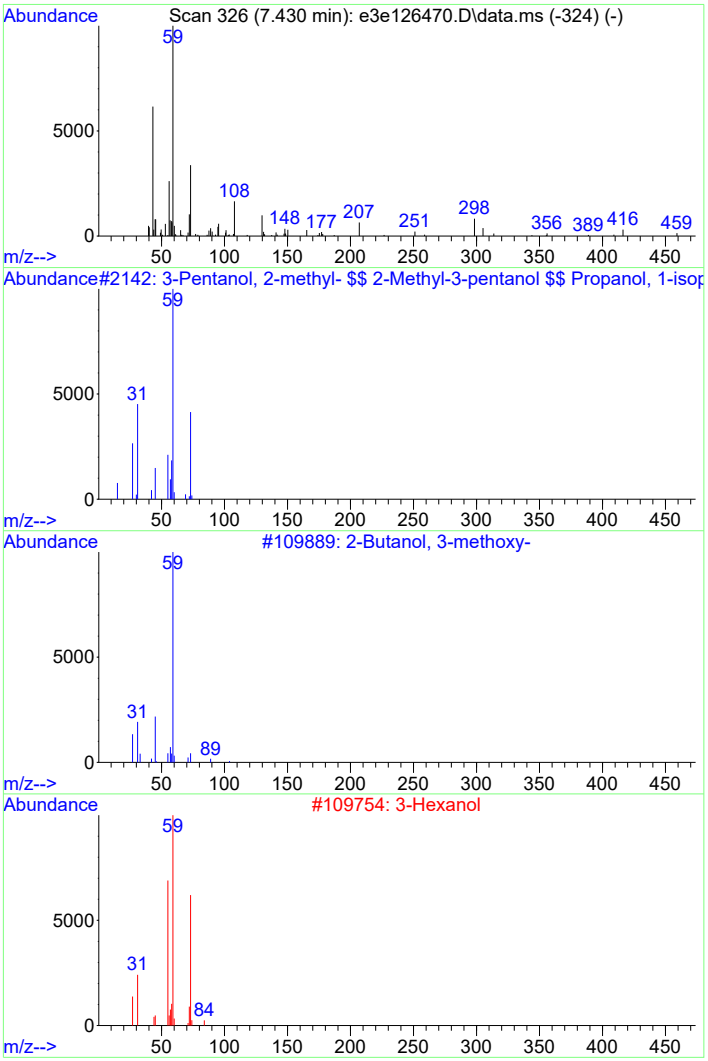
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

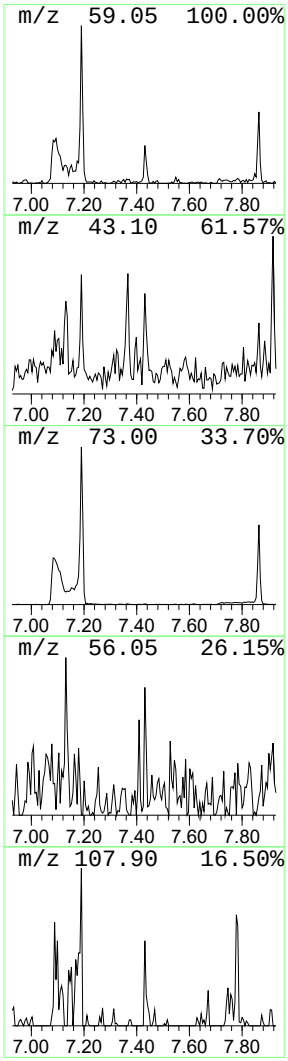
****

Peak Number 11 3-Pentanol, 2-methyl- Concentration Rank 71

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.430	0.00	32873	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Pentanol, 2-methyl- $$ 2-Methy...	102	C6H14O	000565-67-3	40
2	2-Butanol, 3-methoxy-	104	C5H12O2	053778-72-6	38
3	3-Hexanol	102	C6H14O	000623-37-0	37
4	2-Propanol, 1-[2-(2-methoxy-1-me...	206	C10H22O4	020324-33-8	33
5	3-Pentanol, 2-methyl-	102	C6H14O	000565-67-3	33





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Library Search Compound Report

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Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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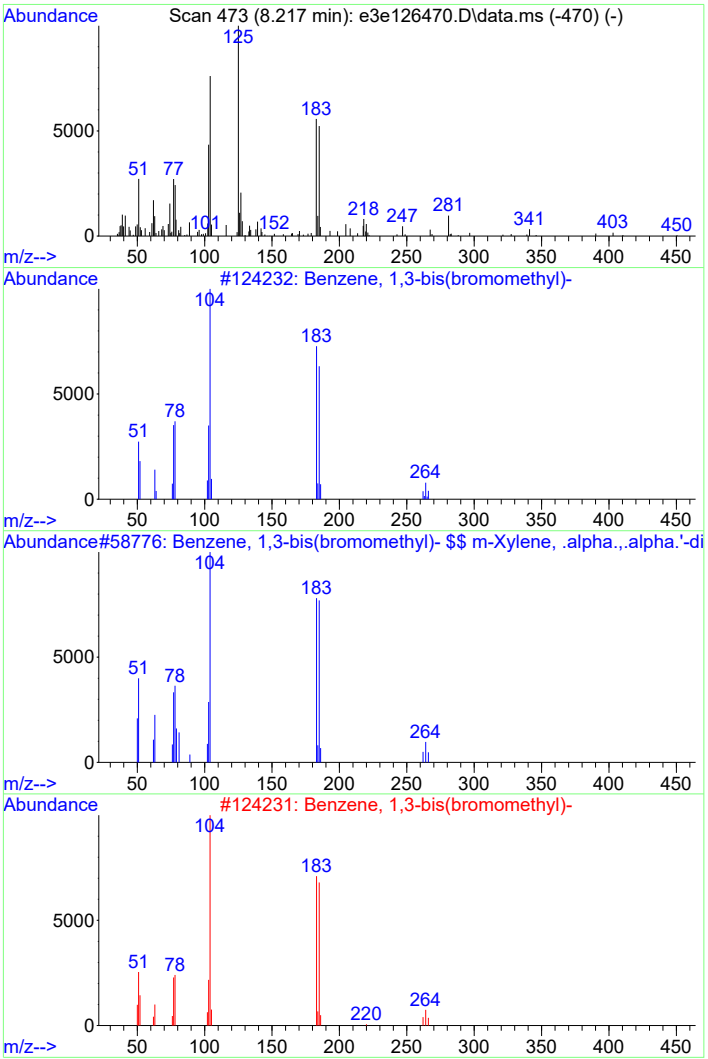
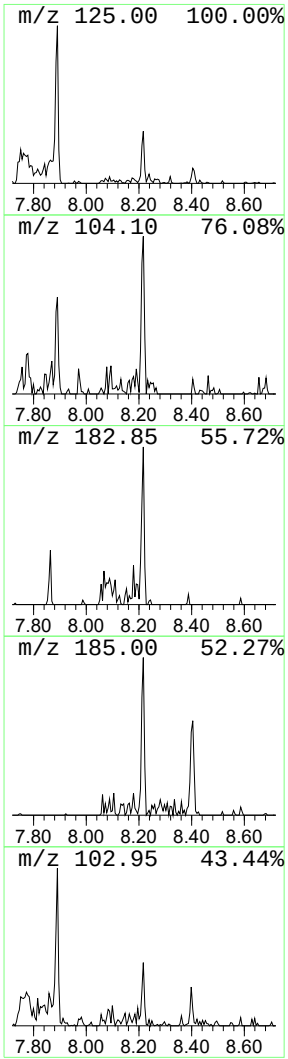
Peak Number 22 Benzene, 1,3-bis(bromomethyl)- Concentration Rank 48

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.217	0.00	89511	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 1,3-bis(bromomethyl)-	262	C8H8Br2	000626-15-3	38
2	Benzene, 1,3-bis(bromomethyl)- $...	262	C8H8Br2	000626-15-3	38
3	Benzene, 1,3-bis(bromomethyl)-	262	C8H8Br2	000626-15-3	38
4	Benzene, 1,4-bis(bromomethyl)- $...	262	C8H8Br2	000623-24-5	35
5	Benzene, 1-bromo-4-(1-methylethy...	198	C9H11Br	000586-61-8	32





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Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

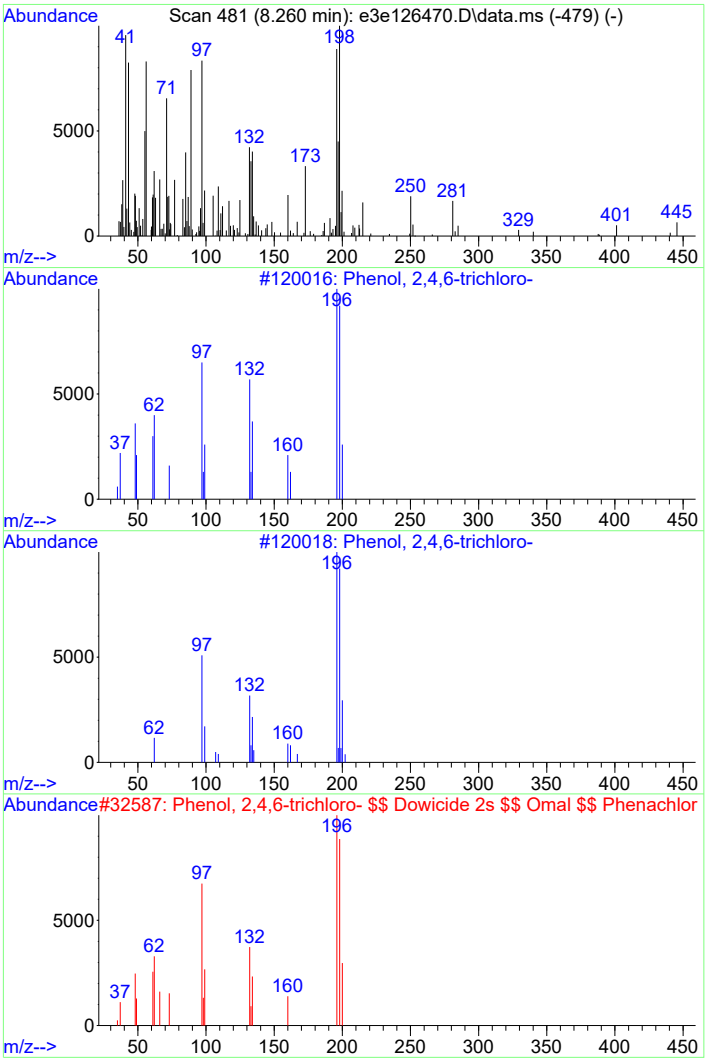
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

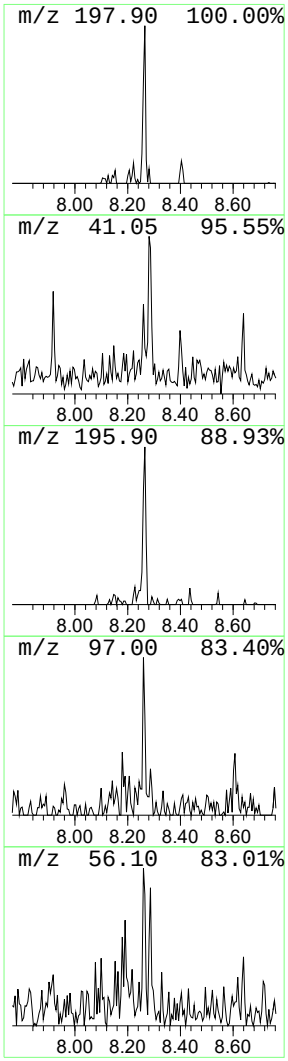
****

Peak Number 24 Phenol, 2,4,6-trichloro- Concentration Rank 39

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.260	0.00	103540	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Phenol, 2,4,6-trichloro-	196	C6H3Cl3O	000088-06-2	46
2	Phenol, 2,4,6-trichloro-	196	C6H3Cl3O	000088-06-2	42
3	Phenol, 2,4,6-trichloro- $$ Dowi...	196	C6H3Cl3O	000088-06-2	38
4	Phenol, 2,4,6-trichloro-	196	C6H3Cl3O	000088-06-2	30
5	1,4,7,10,13,16-Hexaoxacyclononad...	466	C22H42O10	109773-70-8	27





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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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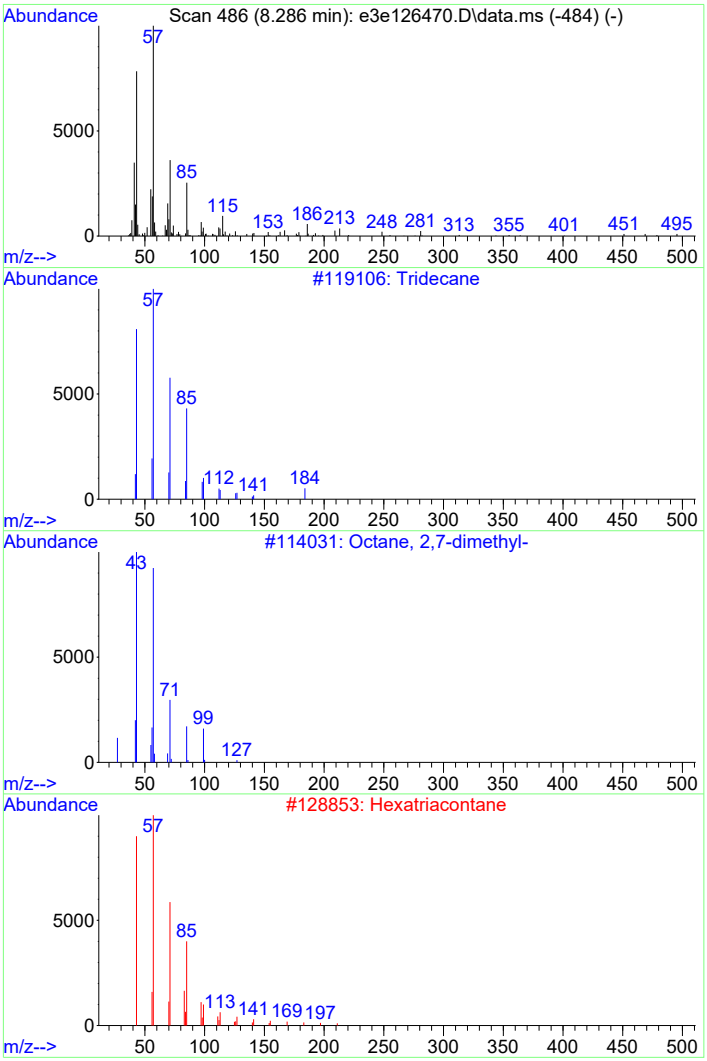
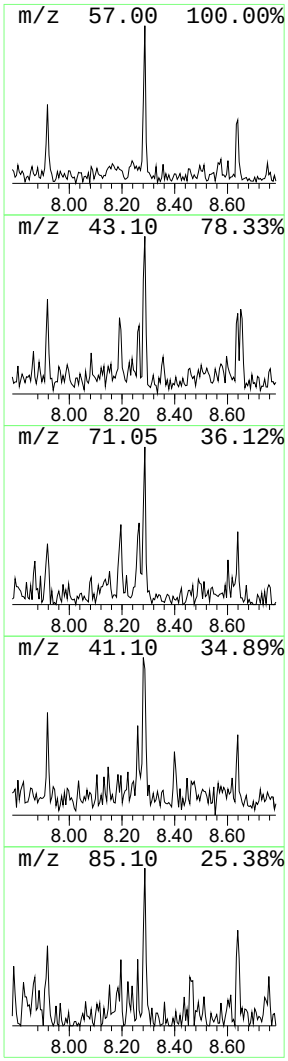
Peak Number 25 Alkane Concentration Rank 47

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.286	0.00	90814	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tridecane	184	C13H28	000629-50-5	59
2	Octane, 2,7-dimethyl-	142	C10H22	001072-16-8	59
3	Hexatriacontane	507	C36H74	000630-06-8	59
4	1-Iodo-2-methylundecane	296	C12H25I	073105-67-6	59
5	2,2,6,6-Tetramethylheptane	156	C11H24	040117-45-1	59





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Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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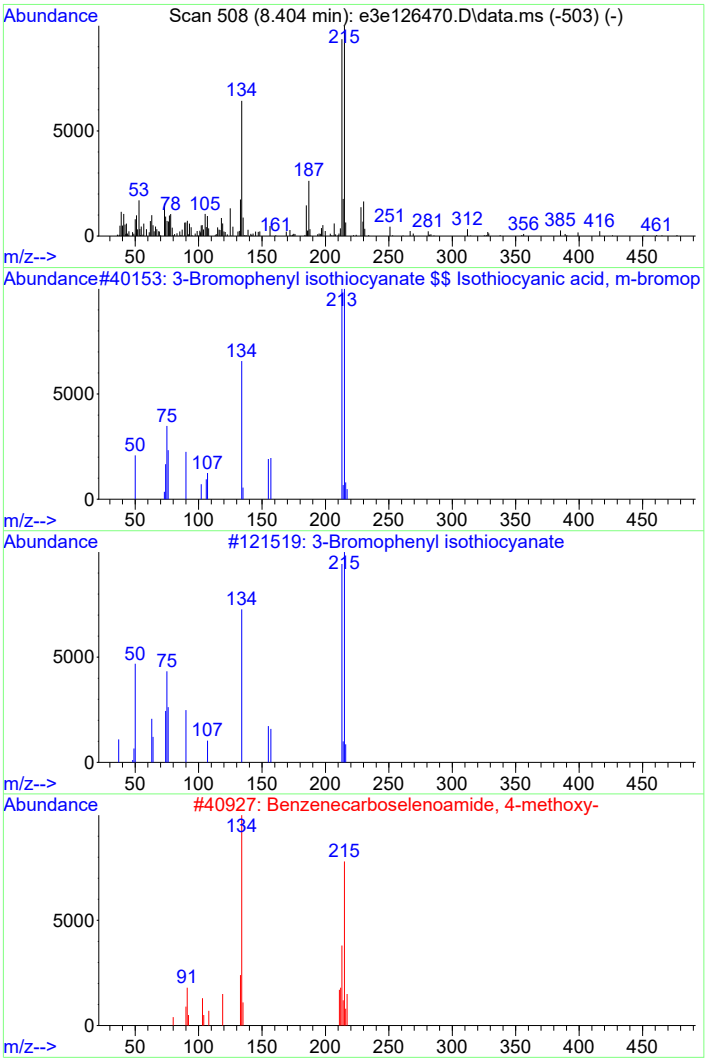
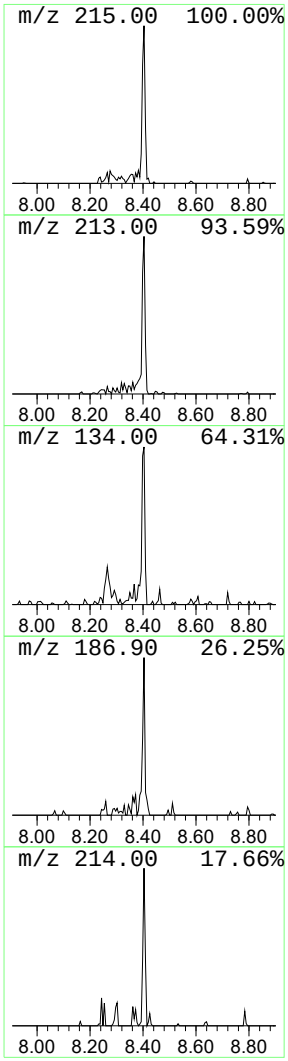
Peak Number 27 3-Bromophenyl isothiocyanate Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.404	0.00	241716	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Bromophenyl isothiocyanate $$ ...	213	C7H4BrNS	002131-59-1	64
2	3-Bromophenyl isothiocyanate	213	C7H4BrNS	002131-59-1	64
3	Benzenecarboselenoamide, 4-methoxy-	215	C8H9NOSe	068090-03-9	50
4	Butane, 1,2,3,4-tetrabromo- $$ 1...	370	C4H6Br4	001529-68-6	27
5	Chlorflurenol $$ 9H-Fluorene-9-c...	260	C14H9ClO3	002464-37-1	25





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Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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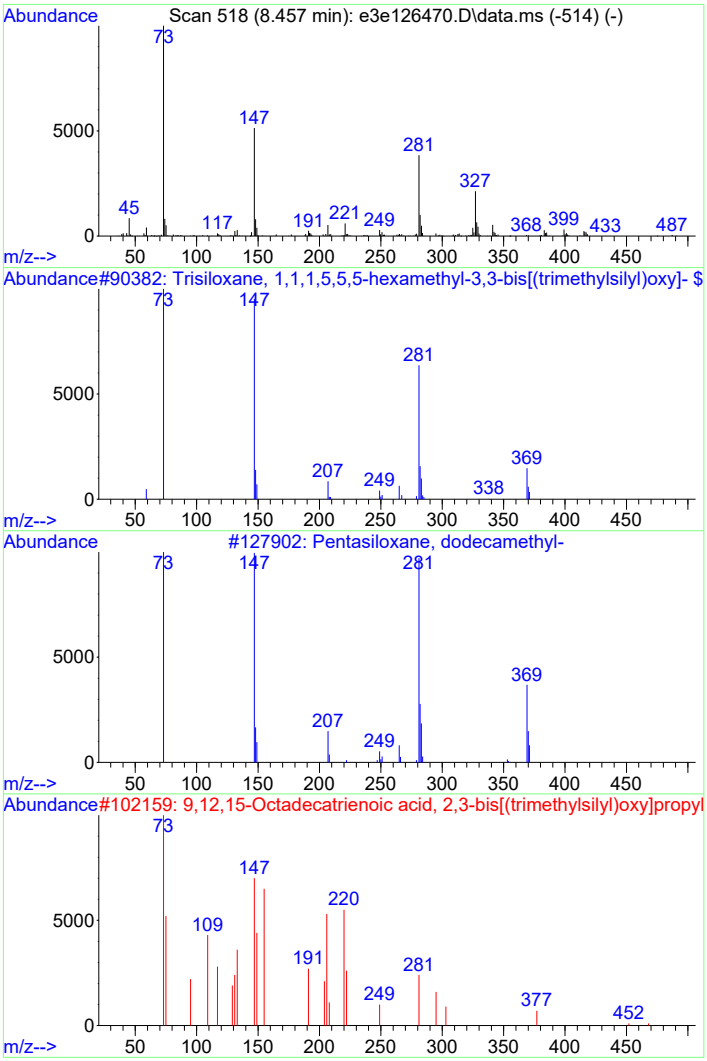
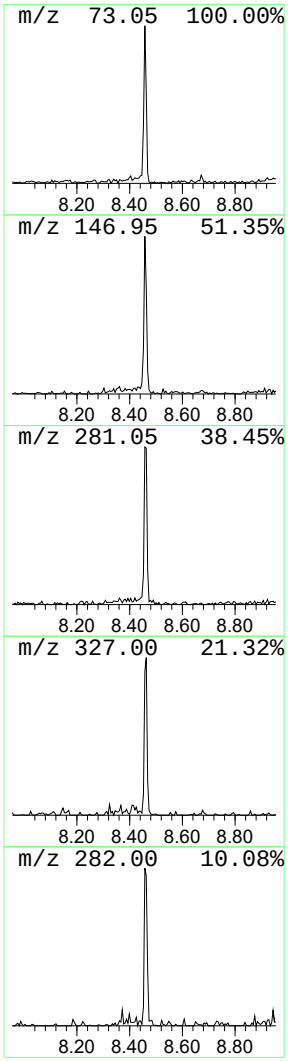
Peak Number 28 Siloxane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.457	0.00	513863	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	52
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	38
3	9,12,15-Octadecatrienoic acid, 2...	496	C27H52O4Si2	055521-22-7	27
4	3,5-Diisopropoxy-1,1,1,7,7,7-hex...	546	C18H50O7Si6	071579-67-4	25
5	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	25





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(b) (4)

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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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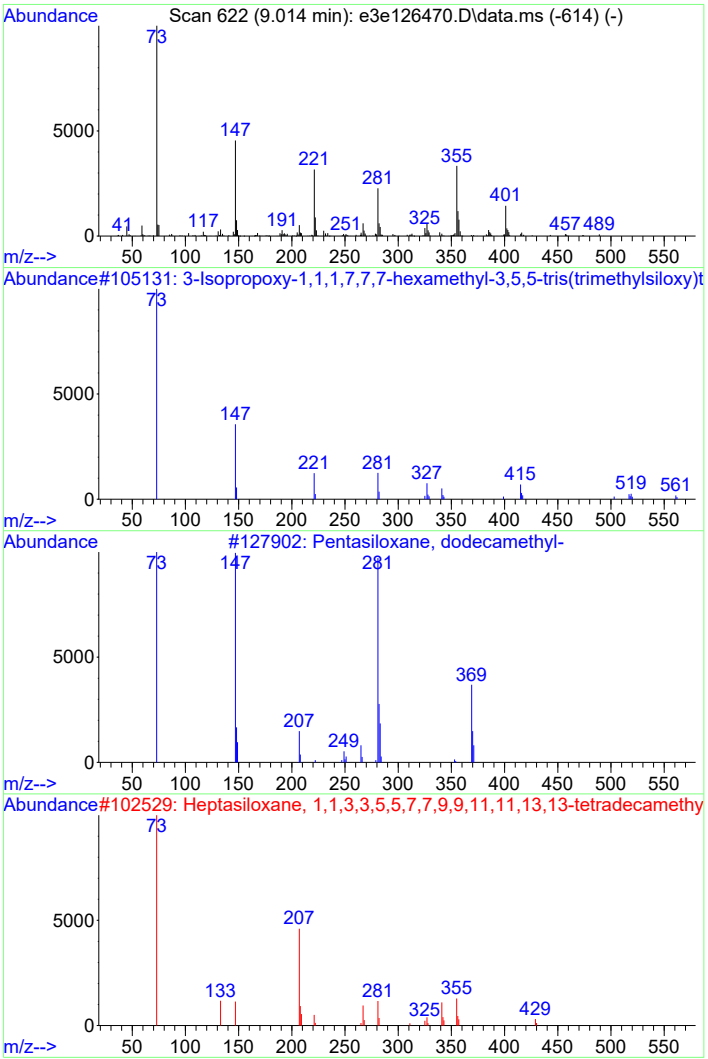
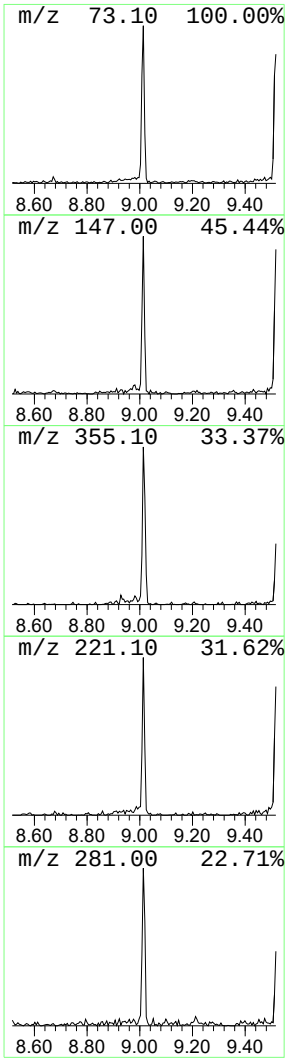
Peak Number 38 Siloxane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.014	0.00	782137	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	25
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25
3	Heptasiloxane, 1,1,3,3,5,5,7,7,9...	504	C14H44O6Si7	019095-23-9	16
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	16
5	Benzoic acid, 2,5-bis(trimethyls...	370	C16H30O4Si3	003618-20-0	16





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Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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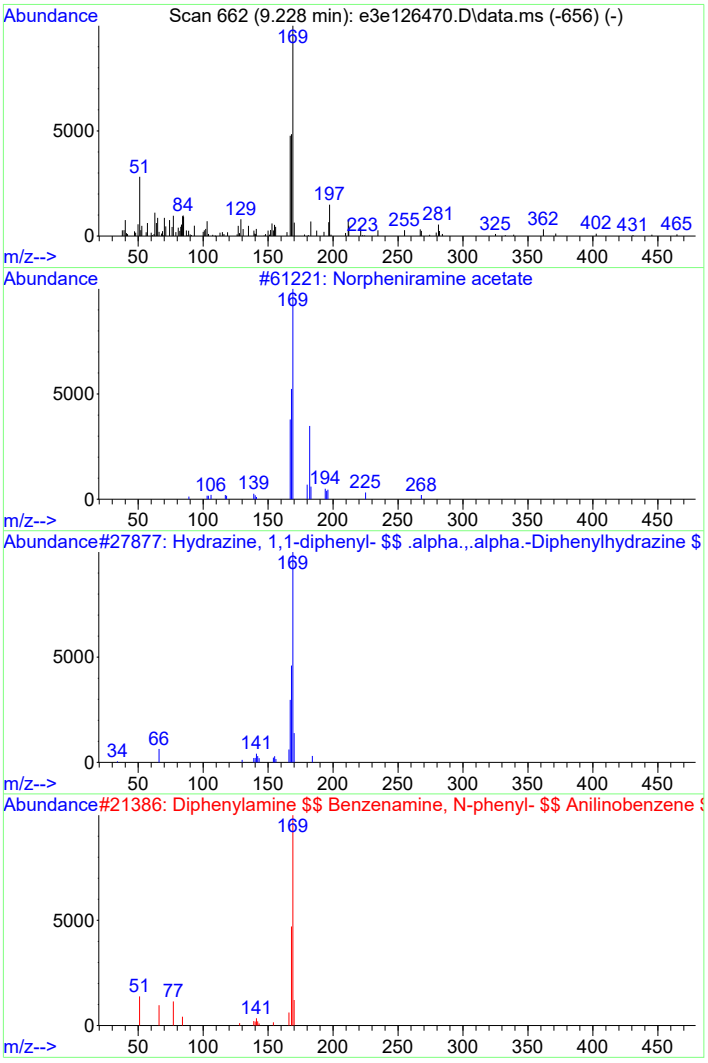
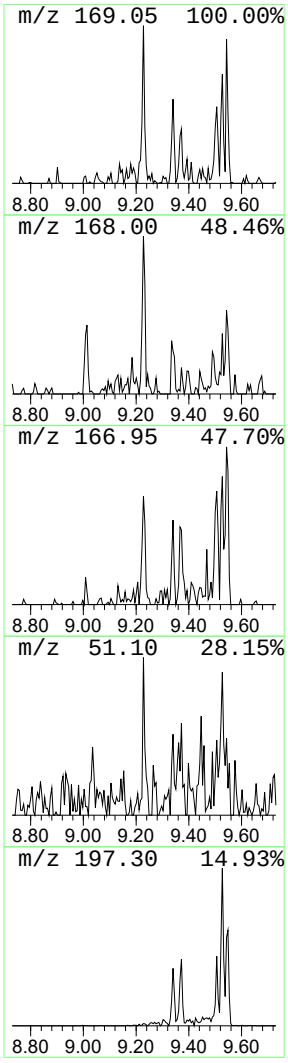
Peak Number 41 Diphenylamine Concentration Rank 51

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.228	0.00	75750	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Norpheniramine acetate	268	C17H20N2O	117540-10-0	58
2	Hydrazine, 1,1-diphenyl- $$ .alp...	184	C12H12N2	000530-50-7	53
3	Diphenylamine $$ Benzenamine, N-...	169	C12H11N	000122-39-4	46
4	Diphenylamine	169	C12H11N	000122-39-4	43
5	Hydrazine, 1,1-diphenyl-	184	C12H12N2	000530-50-7	40





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Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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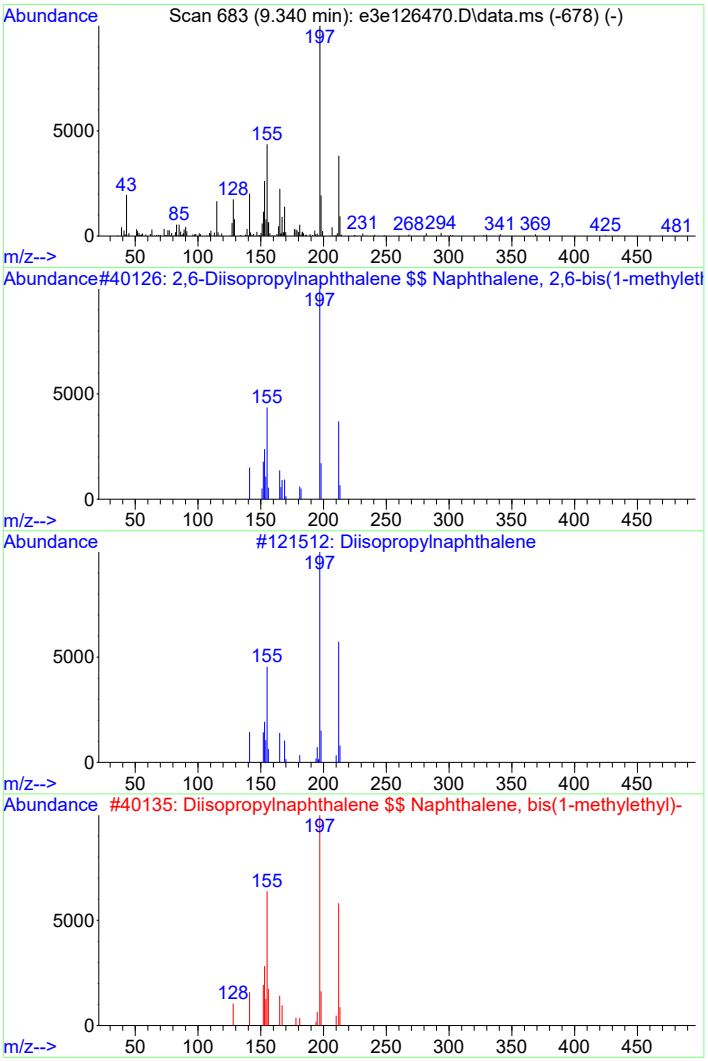
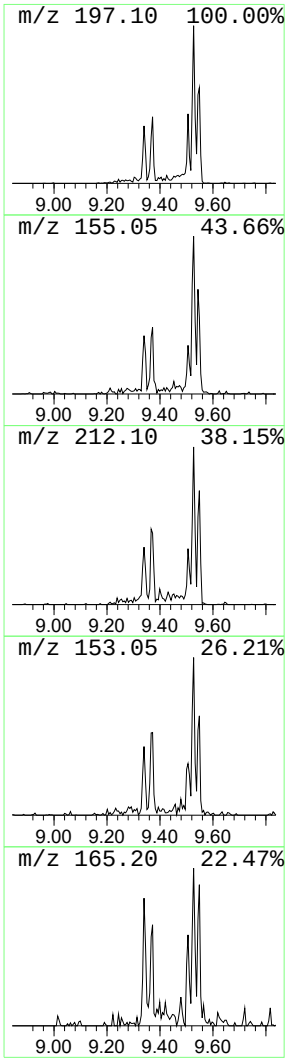
Peak Number 42 Diisopropylnaphthalene Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.340	0.00	286420	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	93
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	90
3	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	81
4	2,6-Diisopropylnaphthalene	212	C16H20	024157-81-1	53
5	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	53





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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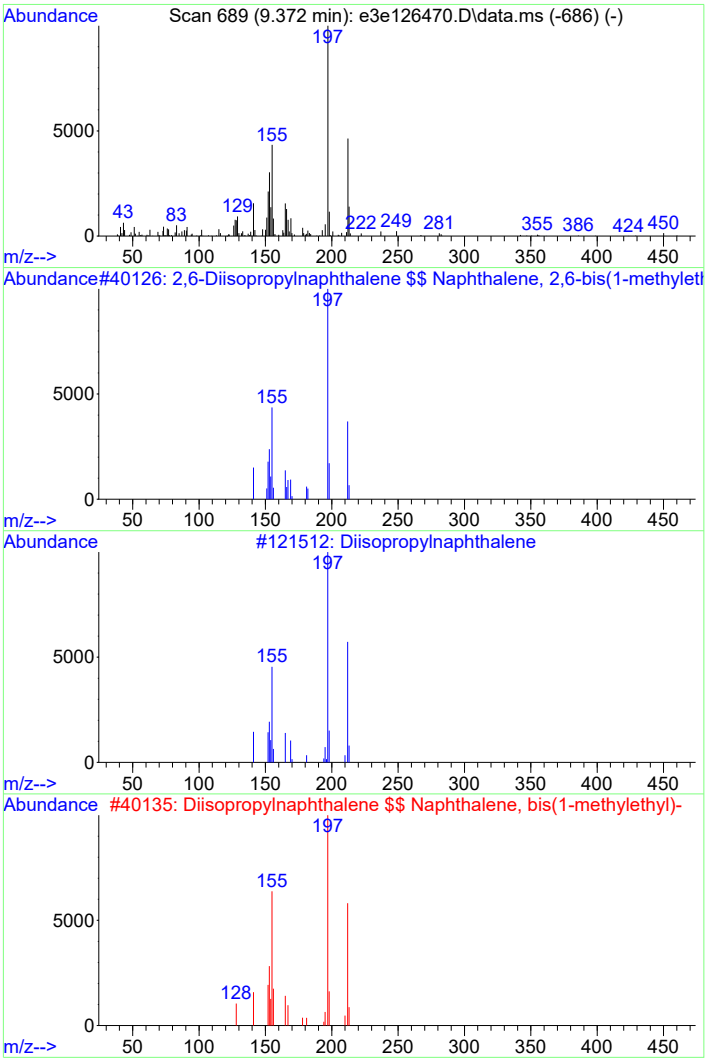
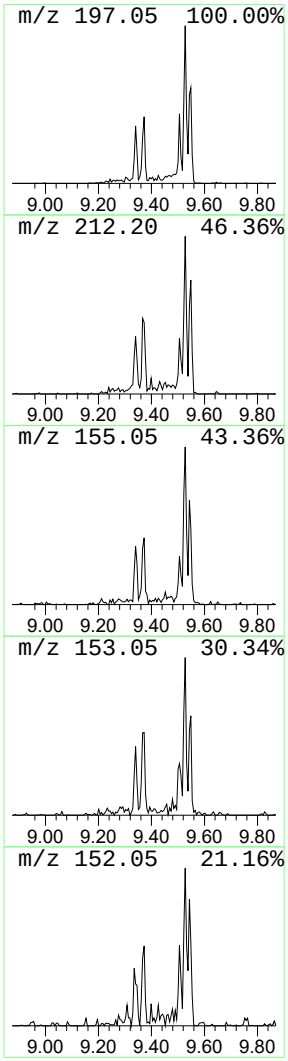
Peak Number 43 Diisopropylnaphthalene Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.372	0.00	250462	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	93
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	91
3	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	58
4	10-Methyl-9-oxa-10-sila-9,10-dih...	212	C13H12OSi	074637-38-0	38
5	Phenol, o-(.alpha.,.alpha.-dimet...	212	C15H16O	018168-40-6	38





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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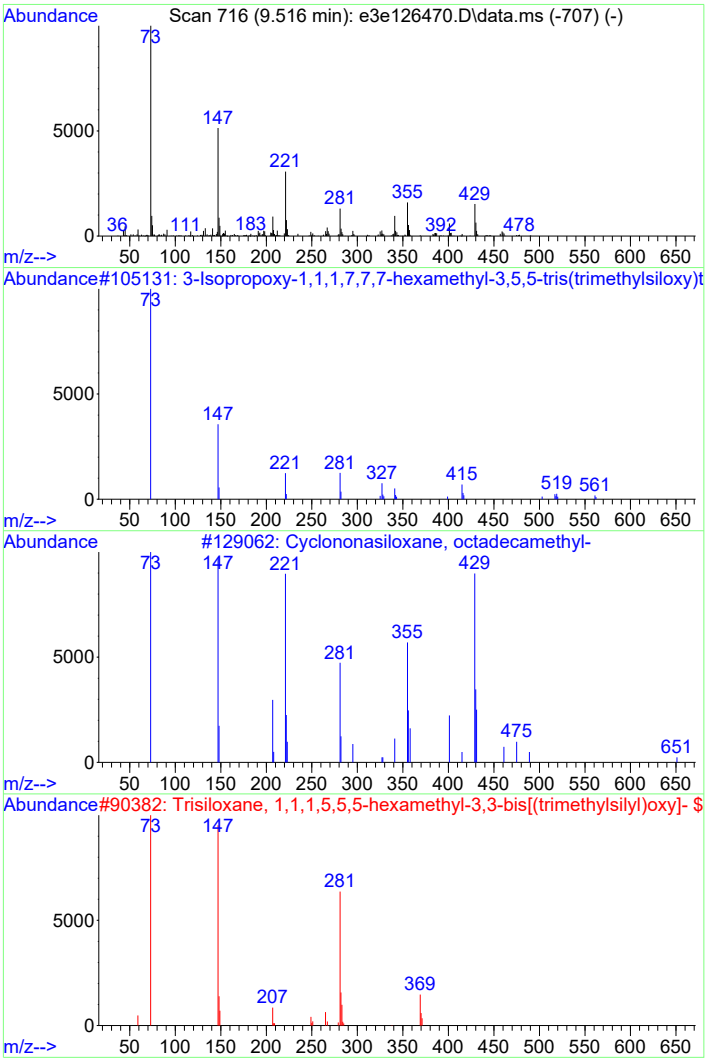
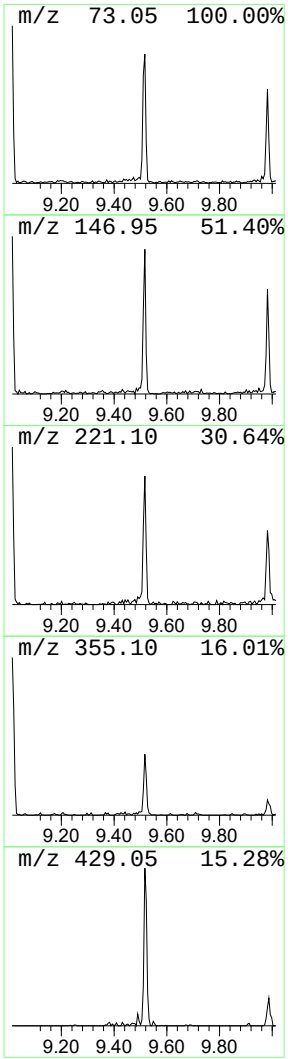
Peak Number 46 Siloxane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.516	0.00	1274040	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	50
2	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	46
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	32
4	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	32
5	Benzoic acid, 2,4,6-trimethyl-, ...	236	C13H20O2Si	070079-88-8	23





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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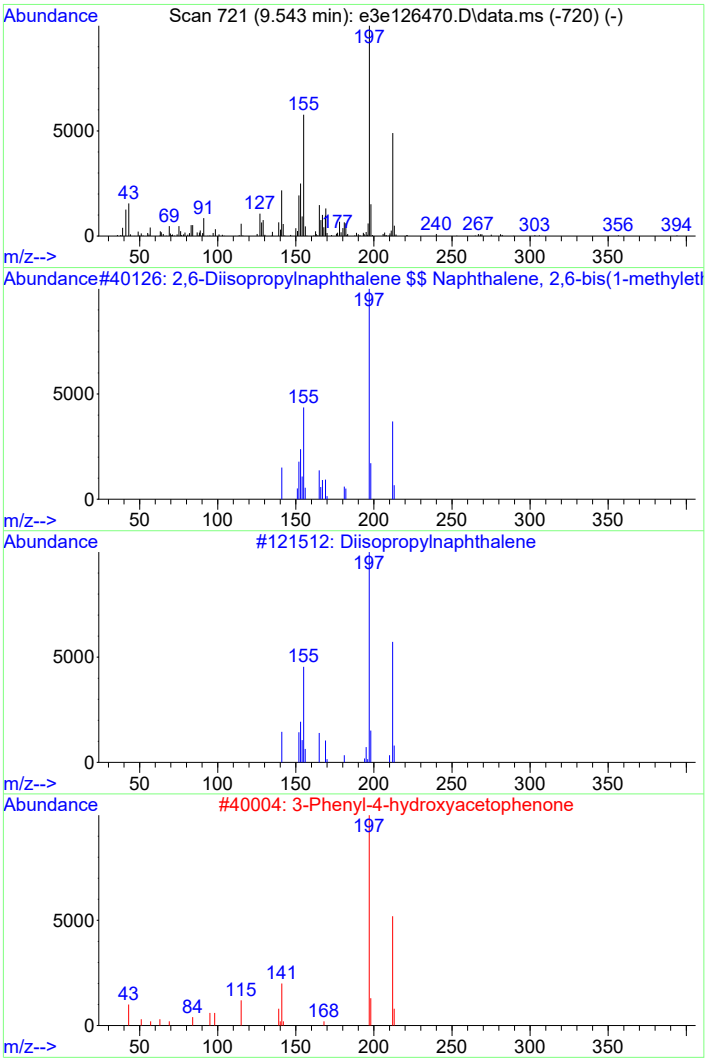
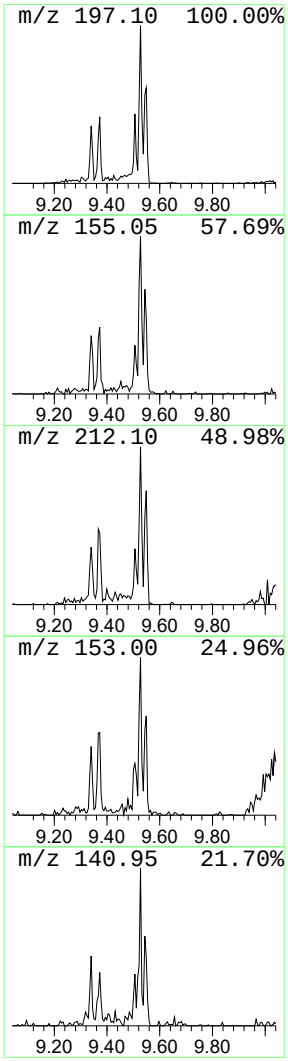
Peak Number 47 Diisopropylnaphthalene Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.543	0.00	294744	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	90
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	62
3	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	46
4	Phenol, 4-(1-methyl-1-phenylethy...	212	C15H16O	000599-64-4	38
5	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	37





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:21 2025

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Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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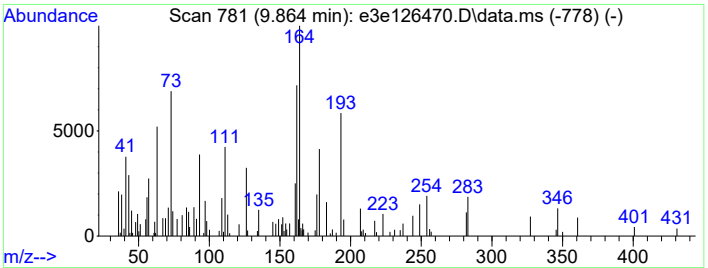
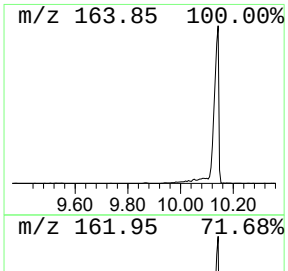
Peak Number 52 Phenol, 2,5-dichloro- Concentration Rank 70

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.864	0.00	33984	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Phenol, 2,5-dichloro-	162	C6H4Cl2O	000583-78-8	35
2	Phenol, 2,6-dichloro- $$ 2,6-Dic...	162	C6H4Cl2O	000087-65-0	35
3	Phenol, 2,4-dichloro-	162	C6H4Cl2O	000120-83-2	27
4	Phenol, 2,6-dichloro-	162	C6H4Cl2O	000087-65-0	25
5	Phenol, 2,4-dichloro- $$ DCP $$ ...	162	C6H4Cl2O	000120-83-2	25





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:22 2025 1

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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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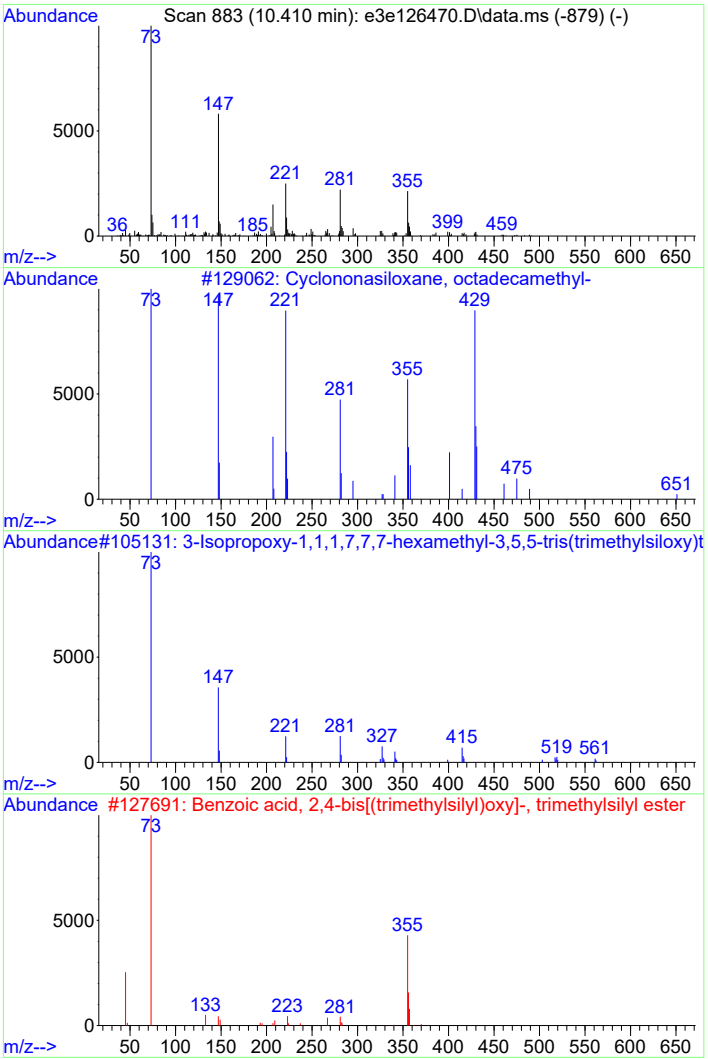
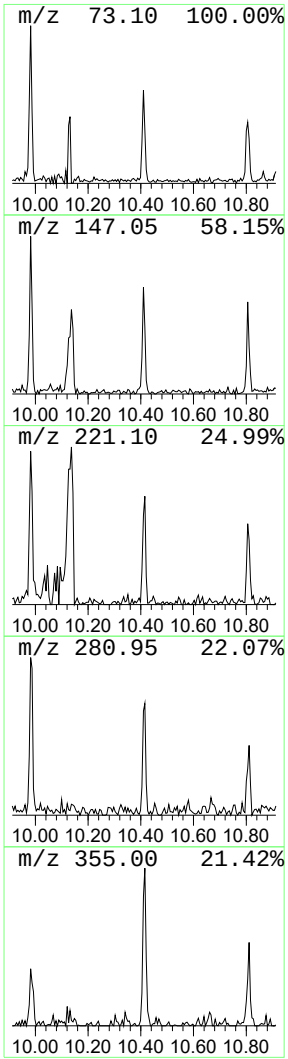
Peak Number 55 Siloxane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.410	0.00	280388	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	53
2	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	45
3	Benzoic acid, 2,4-bis[(trimethyl...	370	C16H30O4Si3	010586-16-0	35
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25
5	Benzoic acid, 2,4,6-trimethyl-, ...	236	C13H20O2Si	070079-88-8	23





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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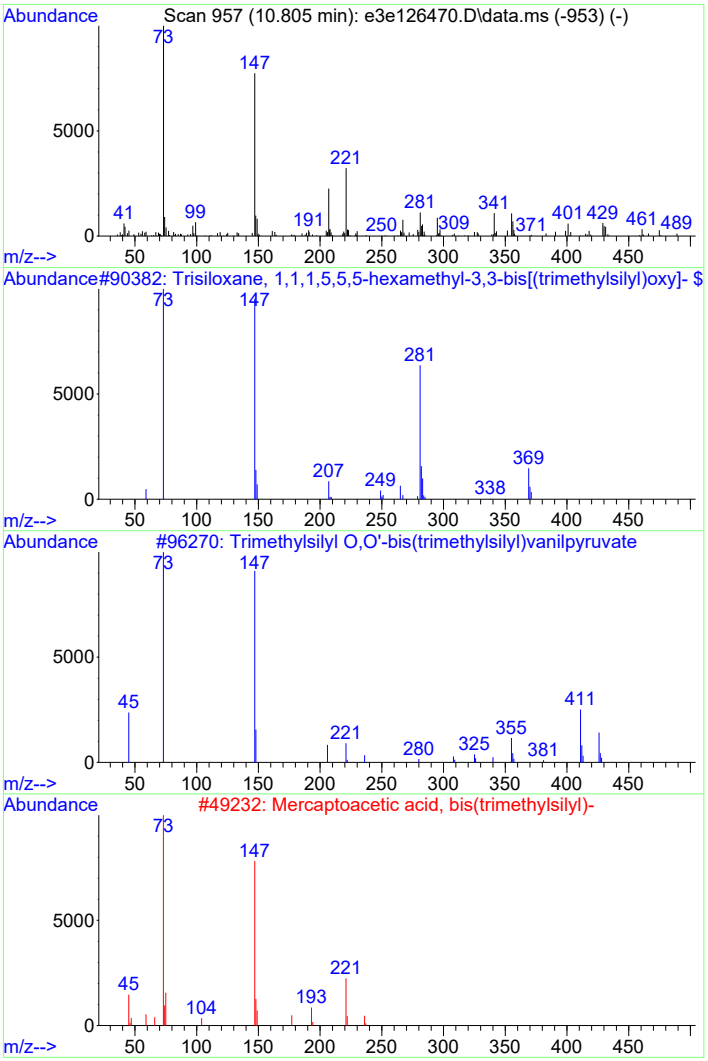
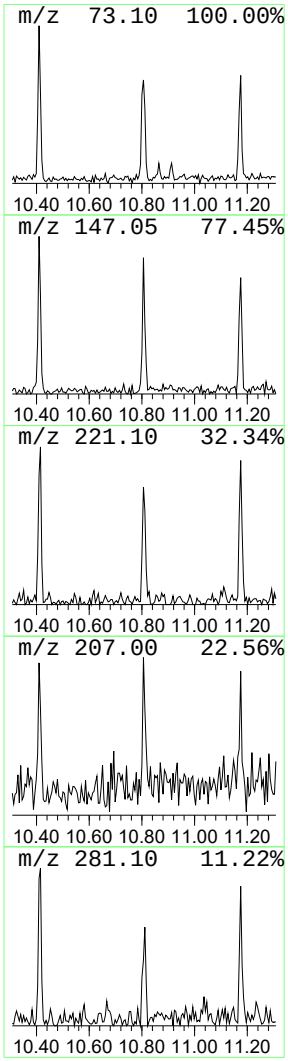
Peak Number 59 Siloxane Concentration Rank 22

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.806	0.00	203078	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	37
2	Trimethylsilyl O,O'-bis(trimethy...	426	C19H34O5Si3	068595-71-1	37
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	32
4	1-(2-Ethyl-[1,3]dithian-2-yl)-3-...	234	C11H22OS2	000000-00-0	25
5	Butanedioic acid, bis(trimethyls...	262	C10H22O4Si2	040309-57-7	25





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Appendix C. Tier 1 Analysis Tech Memos

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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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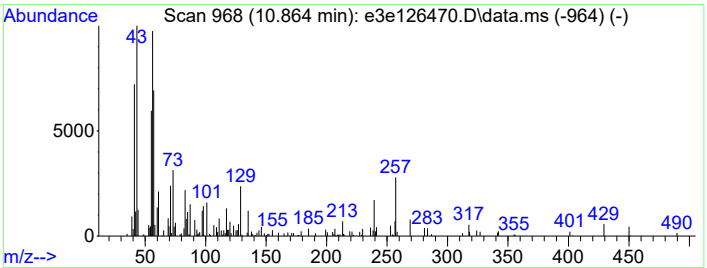
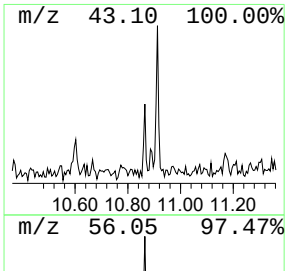
Peak Number 60 Hexadecanoic acid, butyl ester Concentration Rank 34

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.864	0.00	122555	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecanoic acid, butyl ester $...	312	C20H40O2	000111-06-8	91
2	1-Undecene, 10-methyl-	168	C12H24	022370-55-4	38
3	2-Butyl-1-decene	196	C14H28	051655-65-3	35
4	Cyclobutanone, 2,3-dimethyl-, tr...	98	C6H10O	001942-42-3	35
5	2-Methyl-1-octadecene	266	C19H38	000000-00-0	35





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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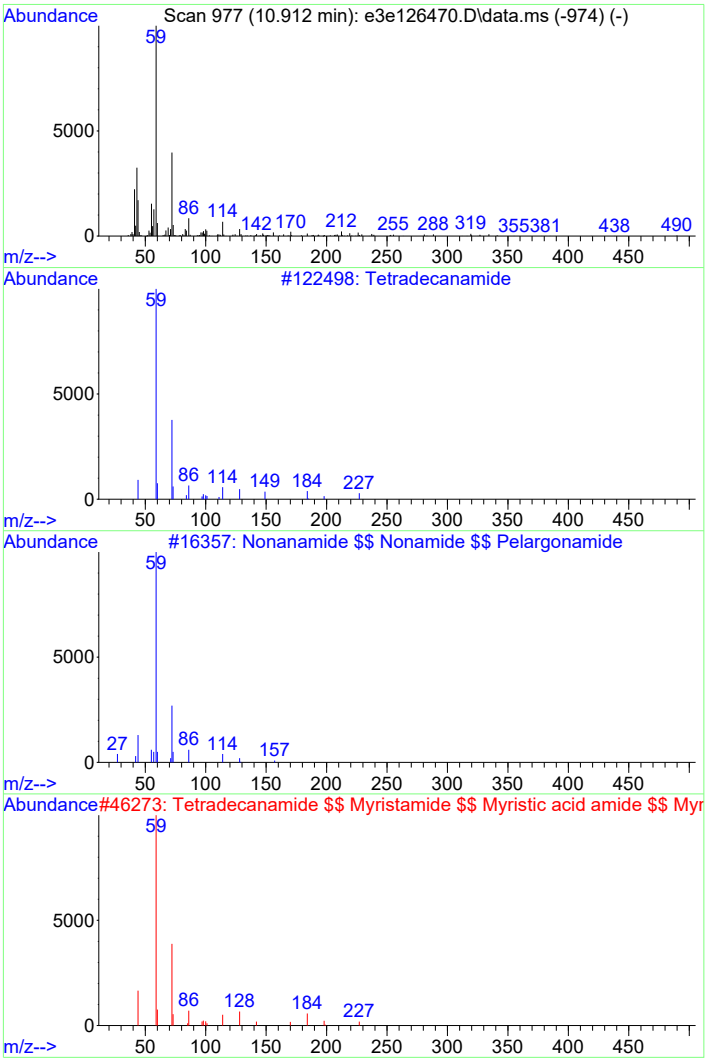
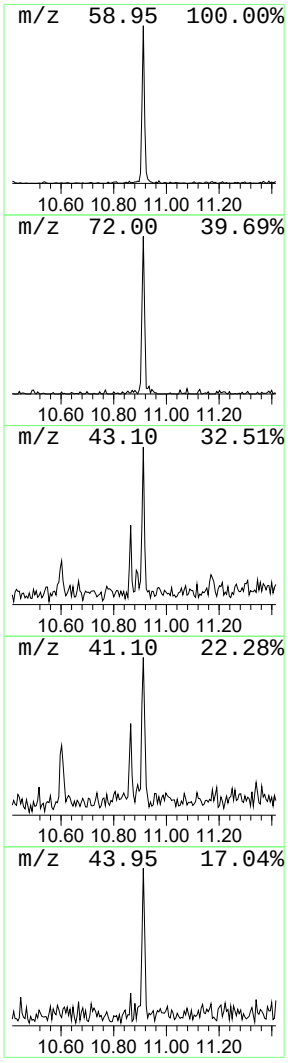
Peak Number 62 Tetradecanamide Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.913	0.00	306163	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetradecanamide	227	C14H29NO	000638-58-4	78
2	Nonanamide $$ Nonamide $$ Pelarg...	157	C9H19NO	001120-07-6	78
3	Tetradecanamide $$ Myristamide $...	227	C14H29NO	000638-58-4	78
4	Dodecanamide $$ Lauramide $$ Ami...	199	C12H25NO	001120-16-7	78
5	Heptanamide, 4-ethyl-5-methyl-	171	C10H21NO	054789-40-1	72





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

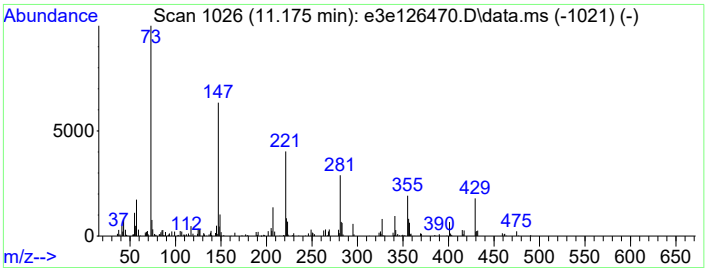
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

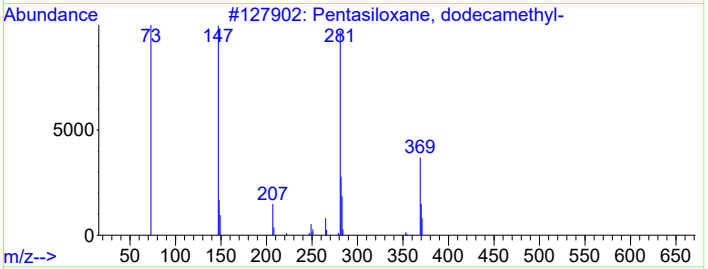
****

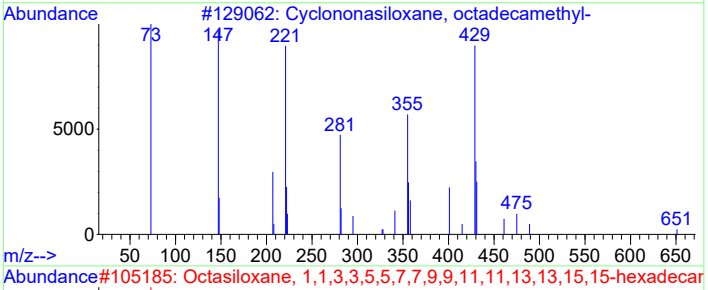
Peak Number 65 Siloxane Concentration Rank 20

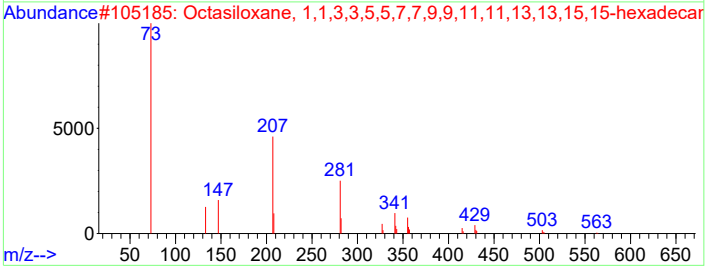
R.T.	EstConc	Area	Relative to ISTD	R.T.
11.175	0.00	206274	External Standard	0.000

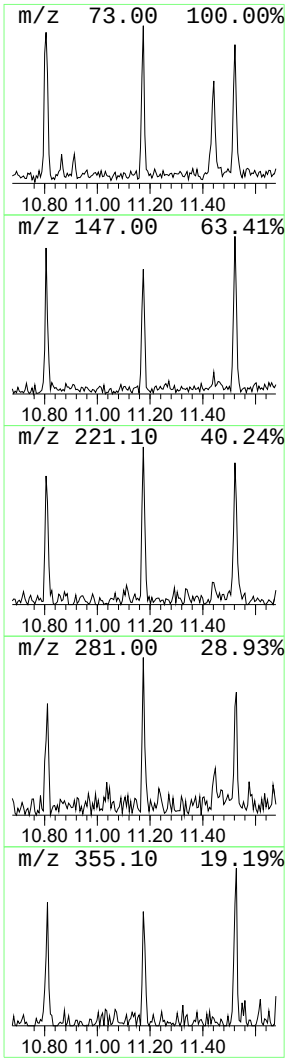
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25
2	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	23
3	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	16
4	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	16
5	Pregnane-3,20-dione, 11-[(trimet...	462	C26H46N2O3Si	057305-27-8	15











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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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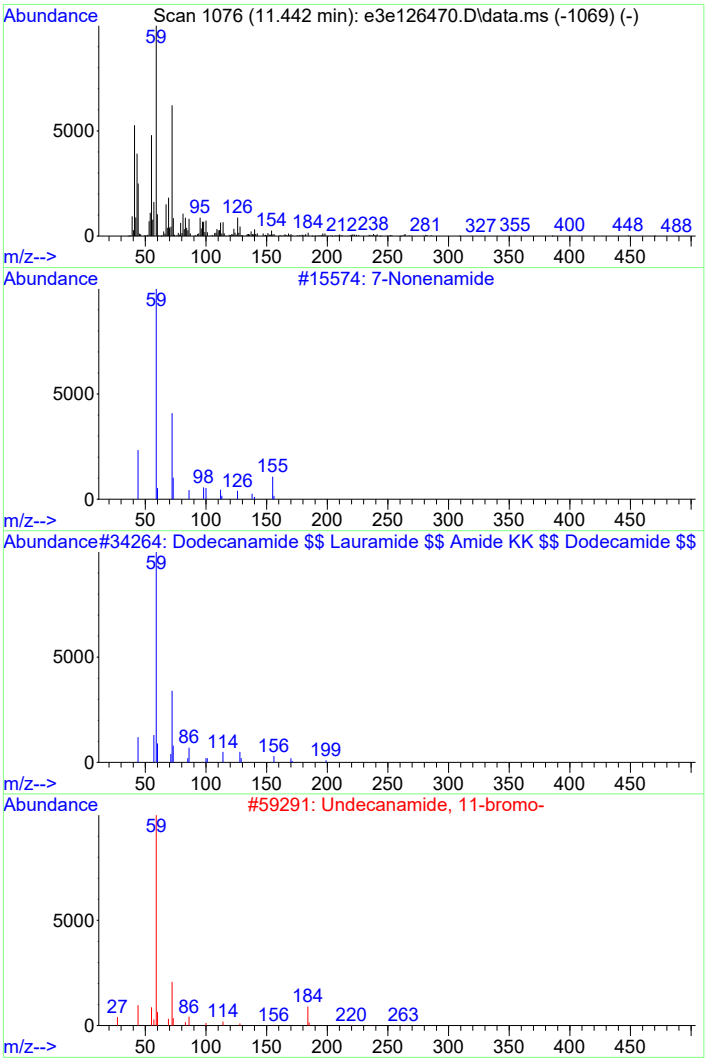
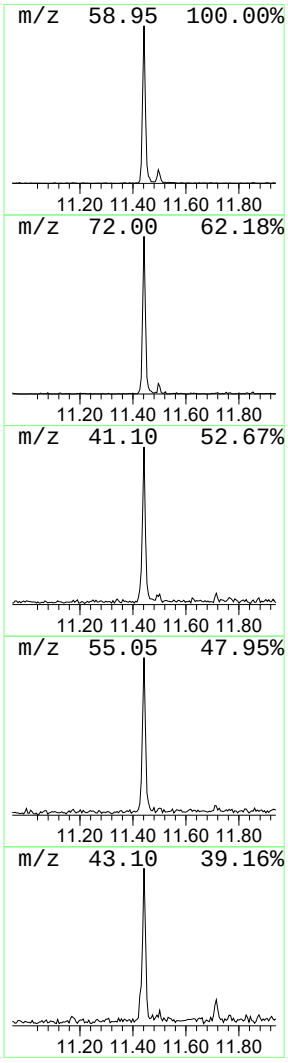
Peak Number 67 Dodecanamide Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.442	0.00	2079780	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	7-Nonenamide	155	C9H17NO	090949-53-4	64
2	Dodecanamide $$ Lauramide $$ Ami...	199	C12H25NO	001120-16-7	59
3	Undecanamide, 11-bromo-	263	C11H22BrNO	000000-00-0	50
4	Hexadecanamide	255	C16H33NO	000629-54-9	50
5	Butanamide, 3-methyl-	101	C5H11NO	000541-46-8	49





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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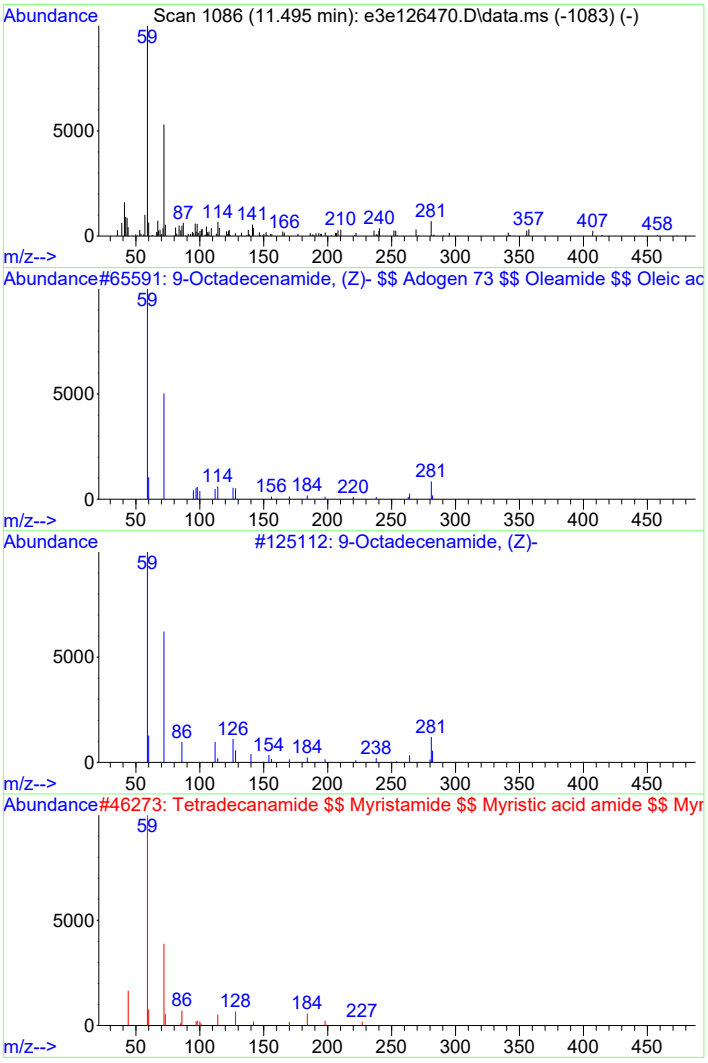
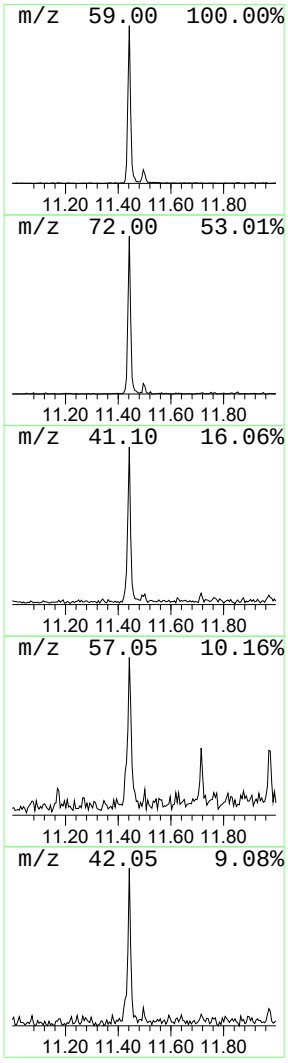
Peak Number 68 9-Octadecenamide, Concentration Rank 43

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.496	0.00	94606	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9-Octadecenamide, (Z)- $$ Adogen...	281	C18H35NO	000301-02-0	72
2	9-Octadecenamide, (Z)-	281	C18H35NO	000301-02-0	56
3	Tetradecanamide $$ Myristamide $...	227	C14H29NO	000638-58-4	56
4	Dodecanamide $$ Lauramide $$ Ami...	199	C12H25NO	001120-16-7	56
5	7-Nonenamide	155	C9H17NO	090949-53-4	50





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

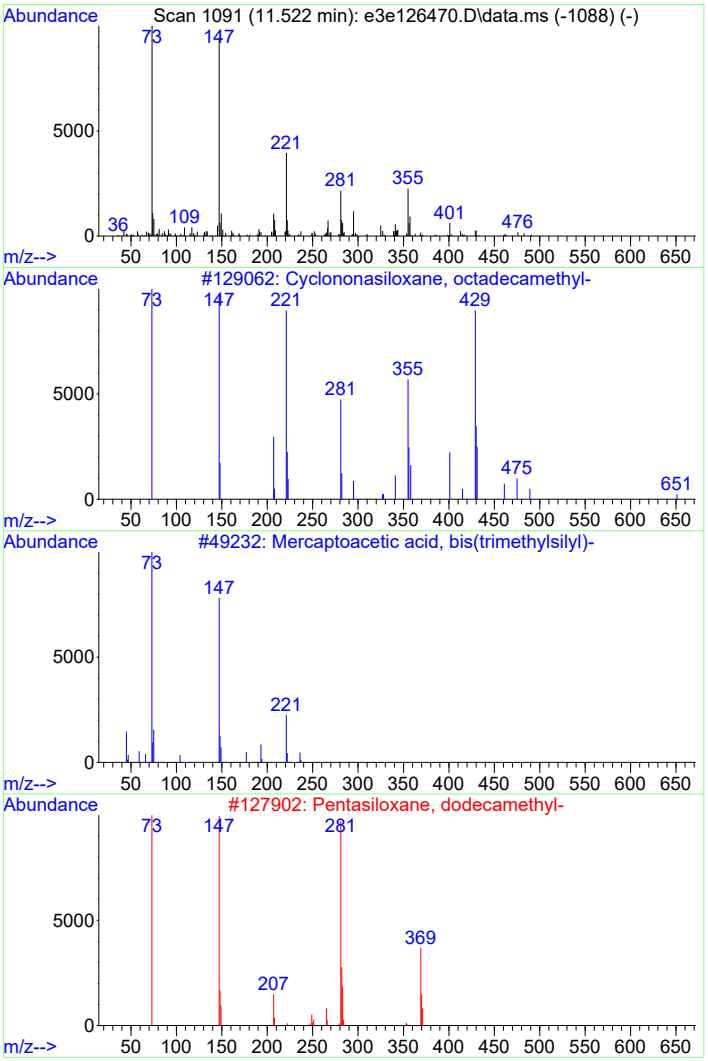
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

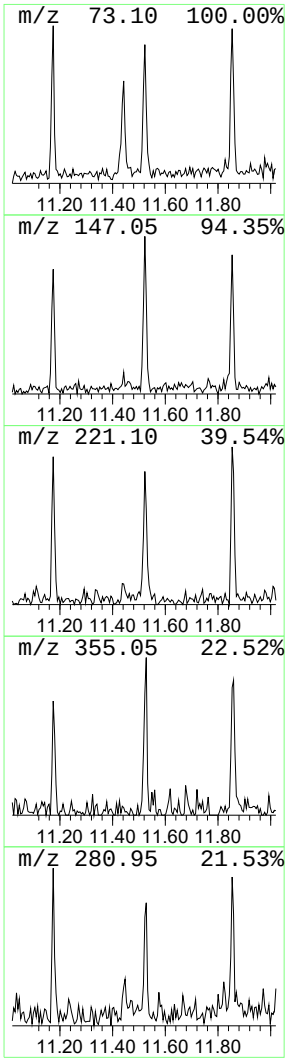
****

Peak Number 69 Siloxane Concentration Rank 24

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.522	0.00	193199	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	40
2	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	37
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25
4	Butanedioic acid, bis(trimethyls...	262	C10H22O4Si2	040309-57-7	17
5	Silane, [(1-methyl-1,3-propanedi...	234	C10H26O2Si2	056771-47-2	17





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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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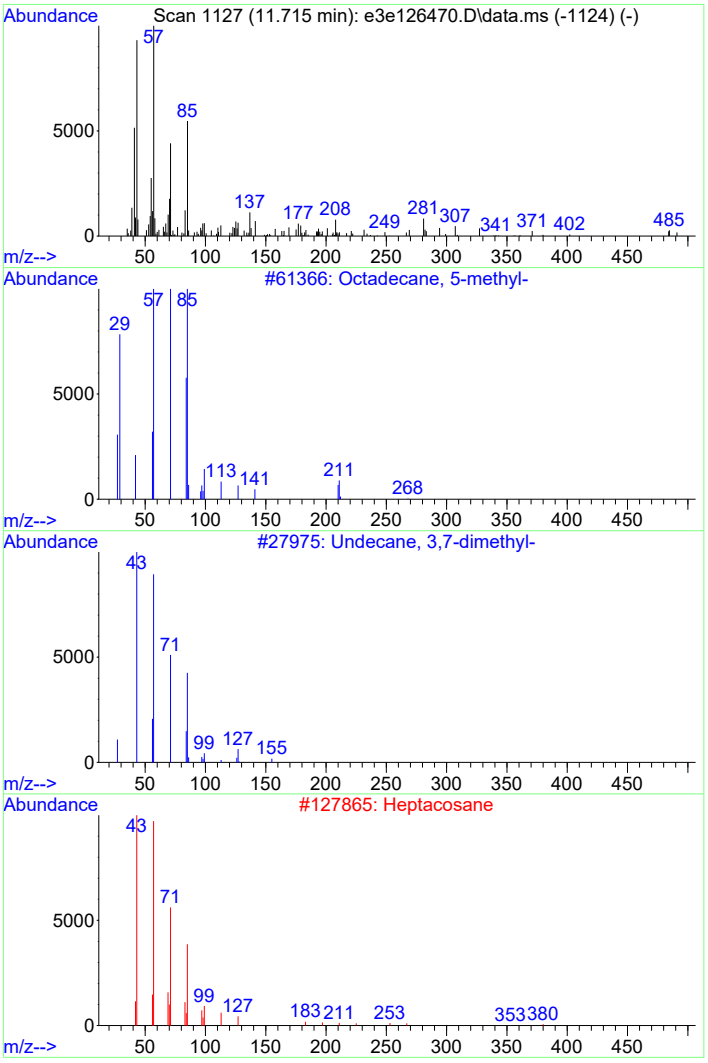
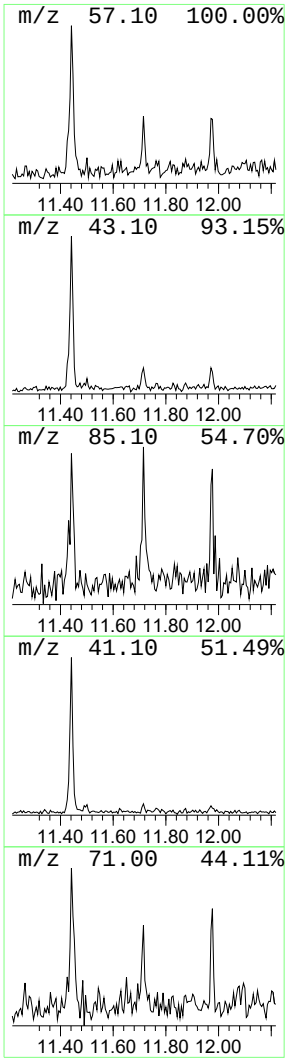
Peak Number 71 Octadecane, 5-methyl- Concentration Rank 41

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.715	0.00	101741	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Octadecane, 5-methyl-	268	C19H40	025117-35-5	50
2	Undecane, 3,7-dimethyl-	184	C13H28	017301-29-0	50
3	Heptacosane	380	C27H56	000593-49-7	50
4	Tetradecane	198	C14H30	000629-59-4	38
5	Dodecane, 2-methyl- $$ 11-Methyl...	184	C13H28	001560-97-0	38





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

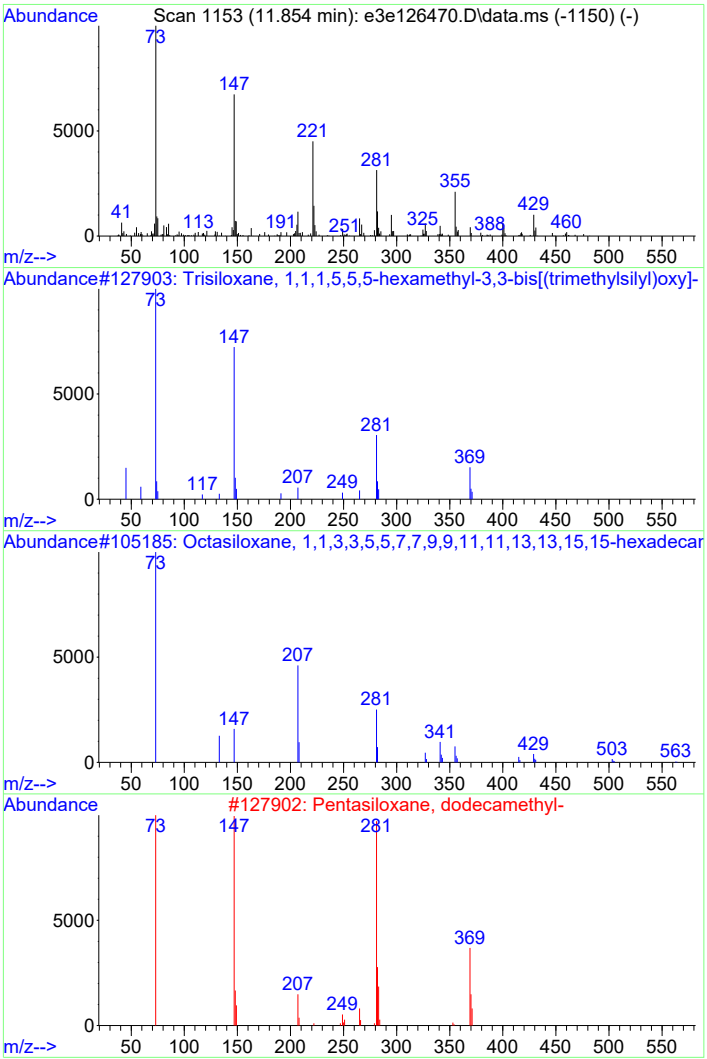
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

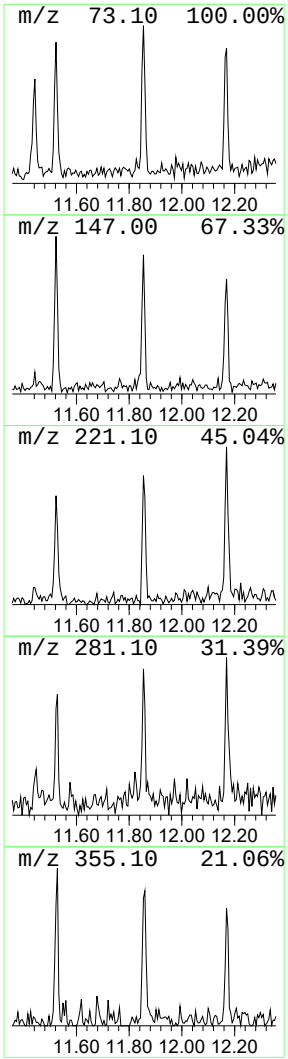
****

Peak Number 73 Siloxane Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.854	0.00	244143	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	16
2	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	12
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	10
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	10
5	Silanamine, N-[2,6-dimethyl-4-[(...	281	C14H27NOSi2	072088-09-6	10





Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

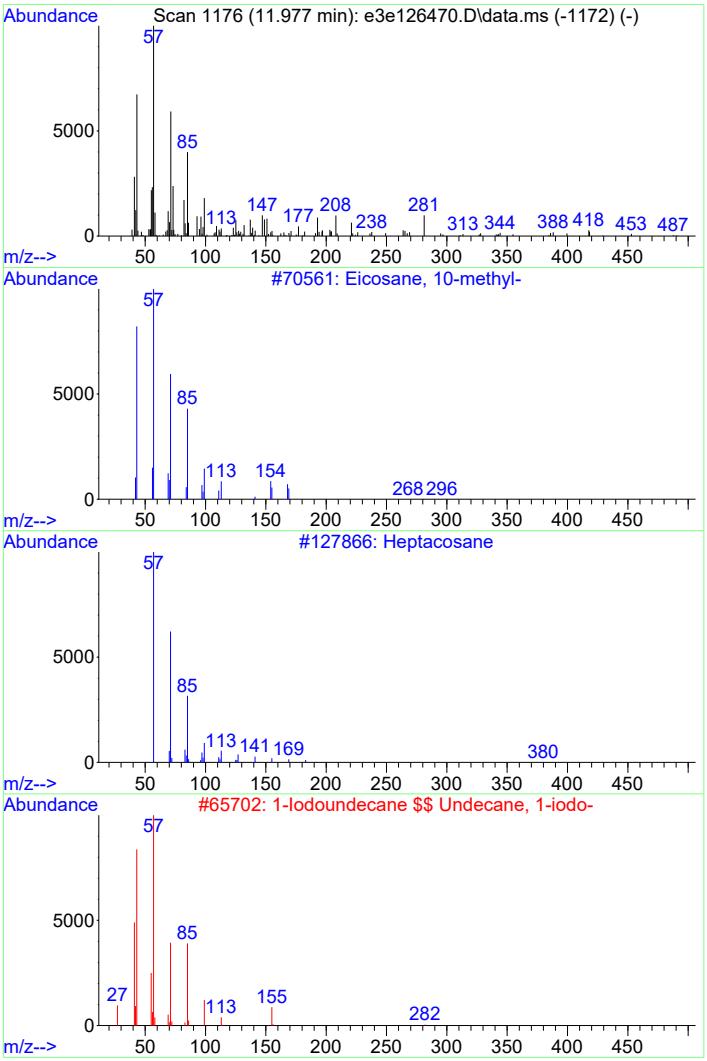
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

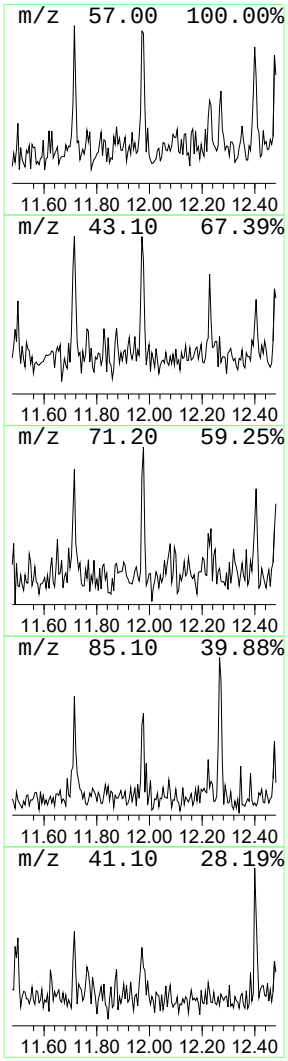
****

Peak Number 74 Alkane Concentration Rank 40

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.977	0.00	102919	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane, 10-methyl-	296	C21H44	054833-23-7	43
2	Heptacosane	380	C27H56	000593-49-7	43
3	1-Iodoundecane $$ Undecane, 1-iodo-	282	C11H23I	004282-44-4	43
4	Dodecane	170	C12H26	000112-40-3	38
5	Undecane, 3,7-dimethyl-	184	C13H28	017301-29-0	38





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:30 2025 32

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

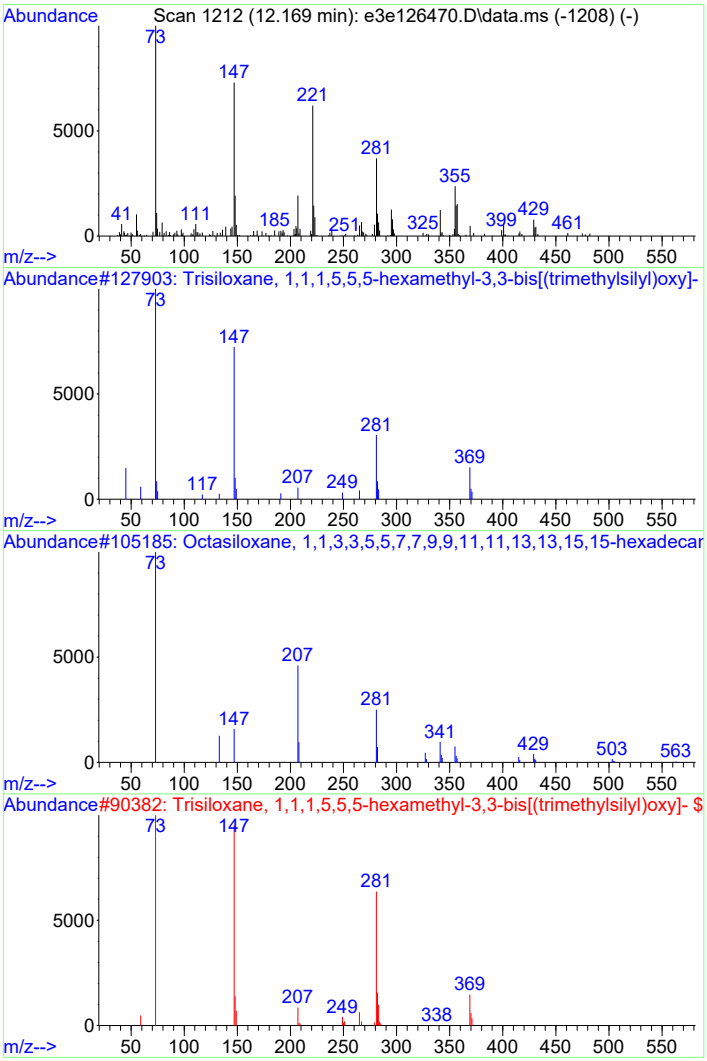
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

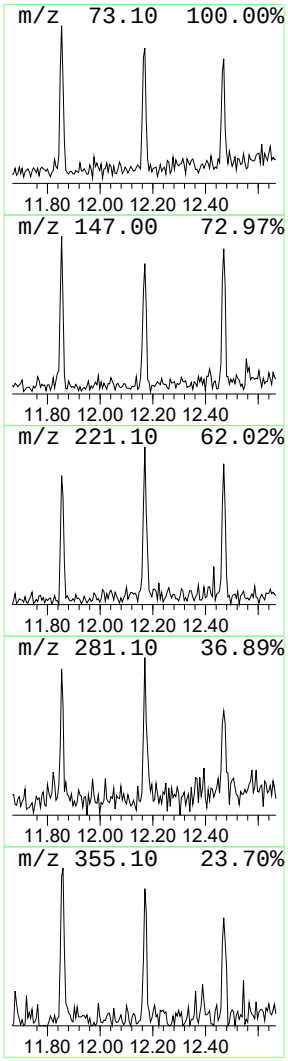
****

Peak Number 75 Siloxane Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.169	0.00	211075	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	22
2	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	16
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
4	1H-Indene, 2,3-dihydro-1,1,3-tri...	236	C18H20	003910-35-8	10
5	Benzene, 1,1'-(1,3,3-trimethyl-1...	236	C18H20	006258-73-7	10





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:31 2025 33

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

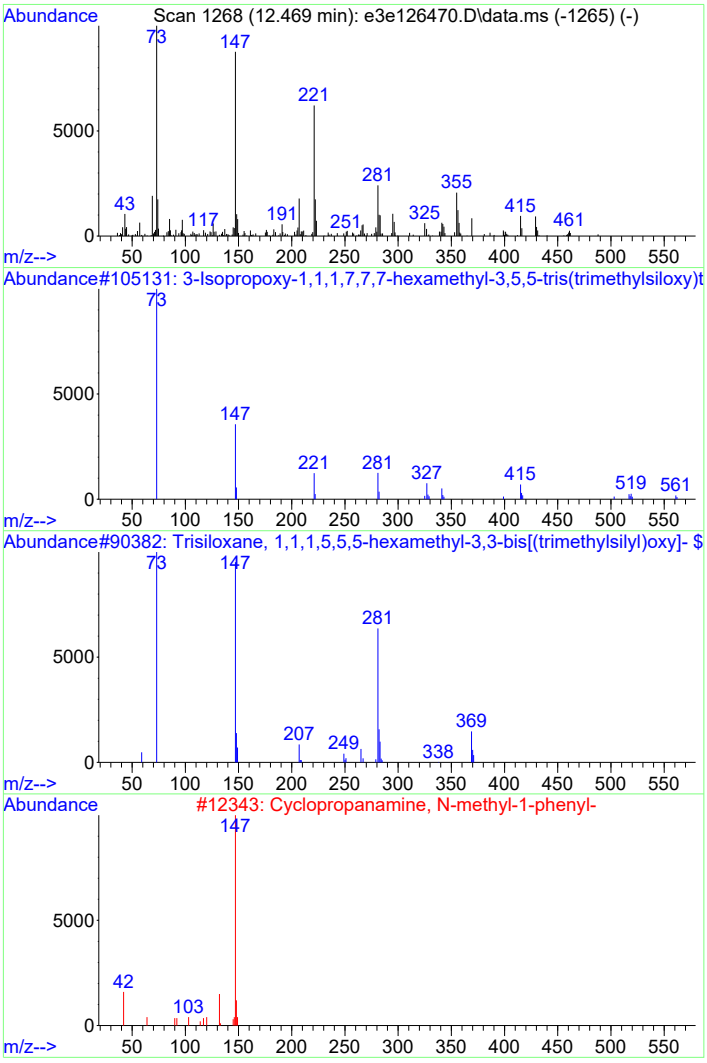
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

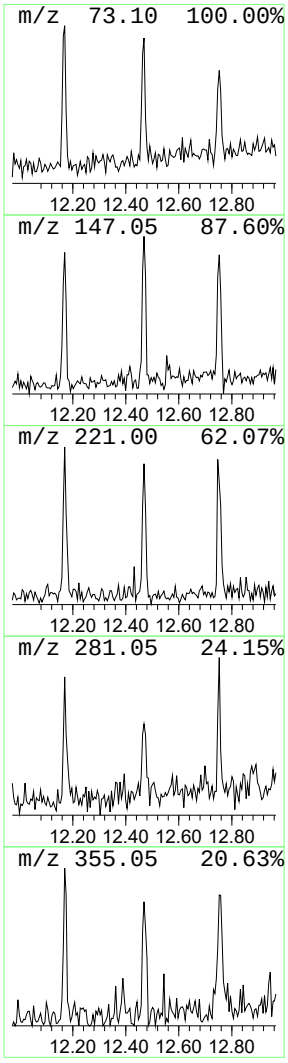
****

Peak Number 77 Siloxane Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.469	0.00	243140	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	37
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	35
3	Cyclopropanamine, N-methyl-1-phe...	147	C10H13N	056771-48-3	22
4	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	16
5	2-Methyl-5-(trimethylsilylmethyl...	246	C12H30OSi2	000000-00-0	12





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:32 2025 (b) (4) 34

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

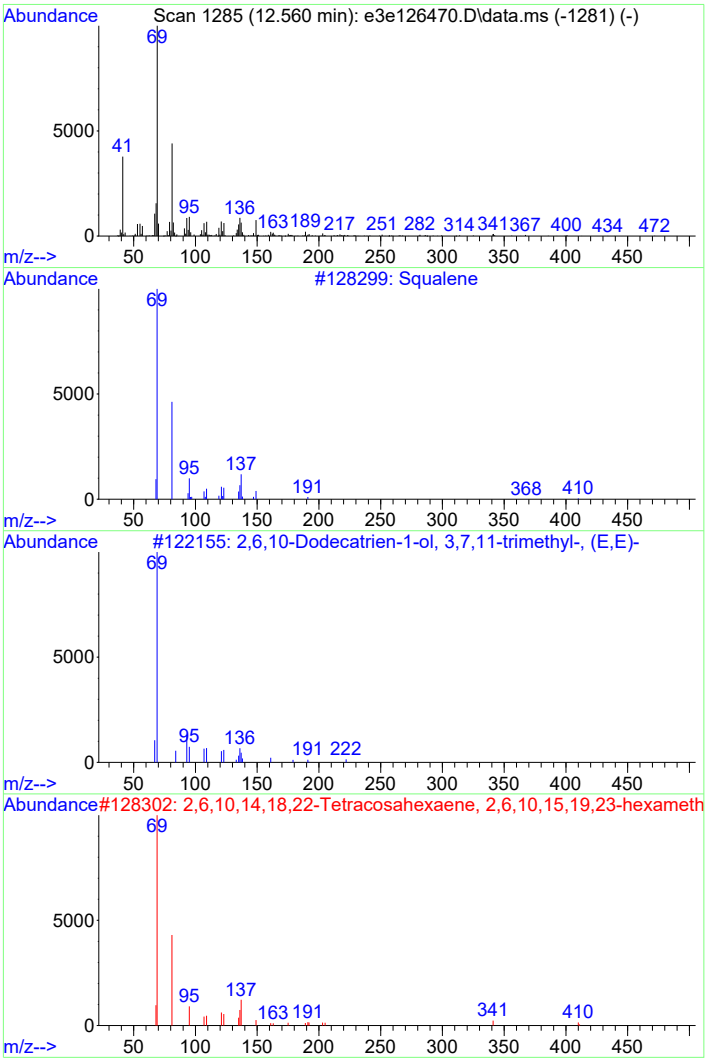
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

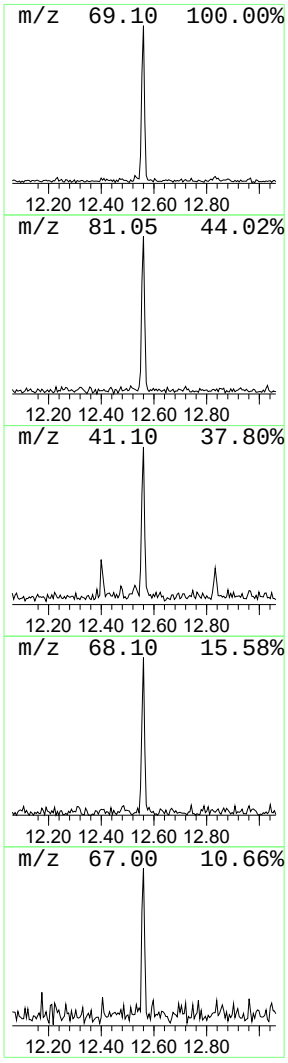
****

Peak Number 79 Squalene Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.560	0.00	582102	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Squalene	410	C30H50	007683-64-9	87
2	2,6,10-Dodecatrien-1-ol, 3,7,11-...	222	C15H26O	000106-28-5	78
3	2,6,10,14,18,22-Tetracosahexaene...	410	C30H50	000111-02-4	78
4	1,5-Heptadiene, 3,3,6-trimethyl-...	138	C10H18	035387-63-4	64
5	4,8,12-Tetradecatrienenitrile, 5...	245	C17H27N	005981-31-7	64





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:32 2025 5

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

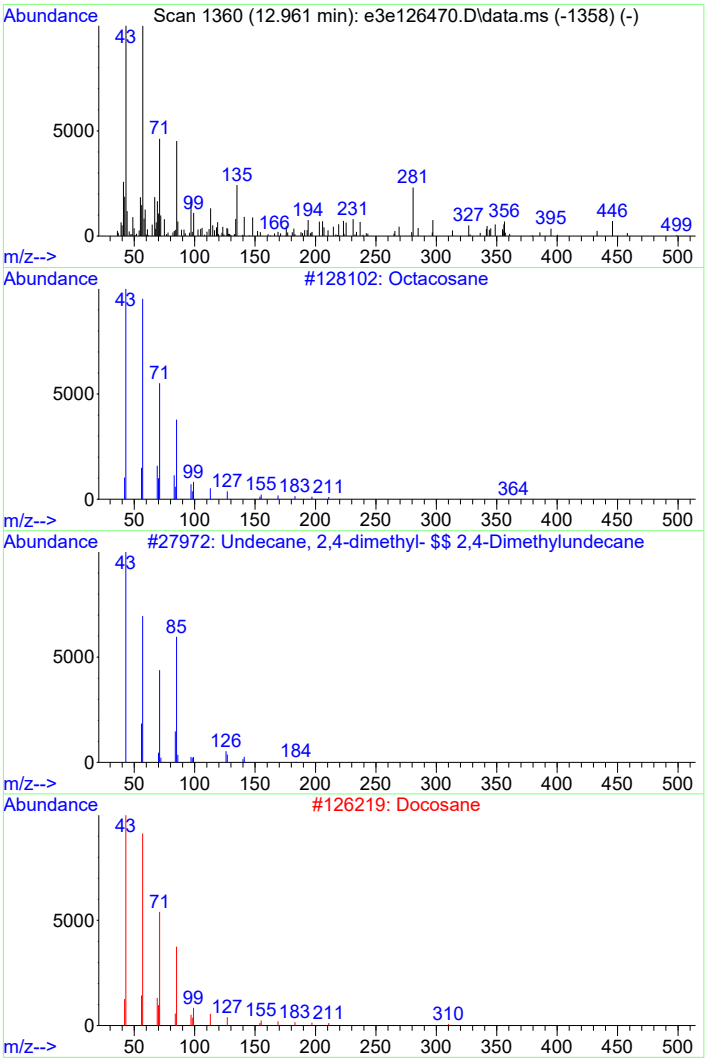
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

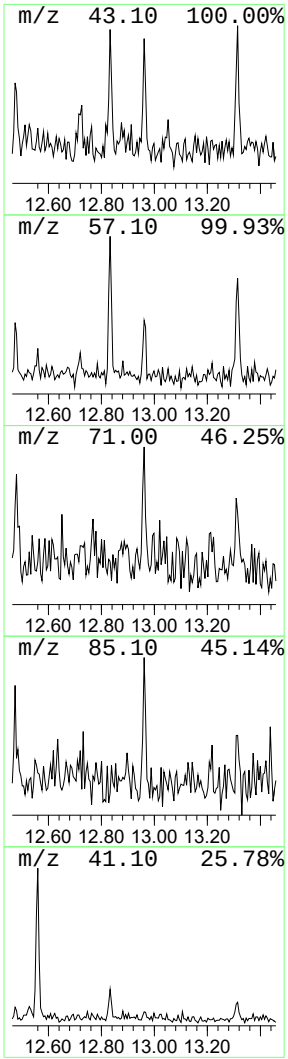
****

Peak Number 82 Alkane Concentration Rank 44

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.961	0.00	94515	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Octacosane	394	C28H58	000630-02-4	43
2	Undecane, 2,4-dimethyl- $$ 2,4-D...	184	C13H28	017312-80-0	38
3	Docosane	310	C22H46	000629-97-0	38
4	Tricosane	324	C23H48	000638-67-5	38
5	Undecane, 5,7-dimethyl-	184	C13H28	017312-83-3	38





Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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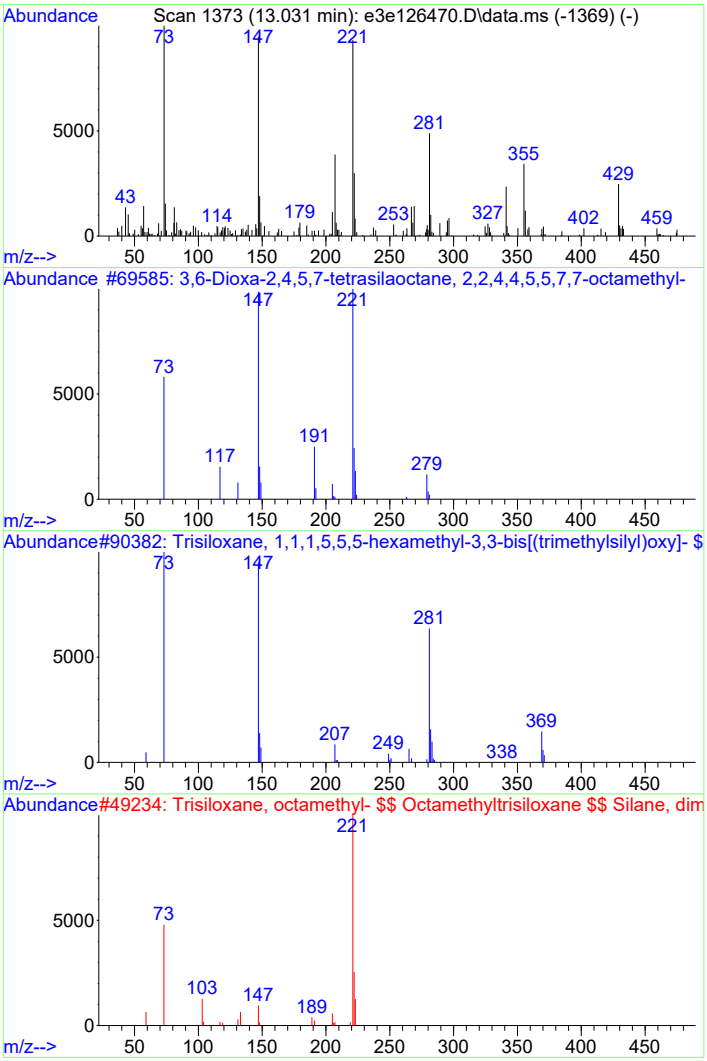
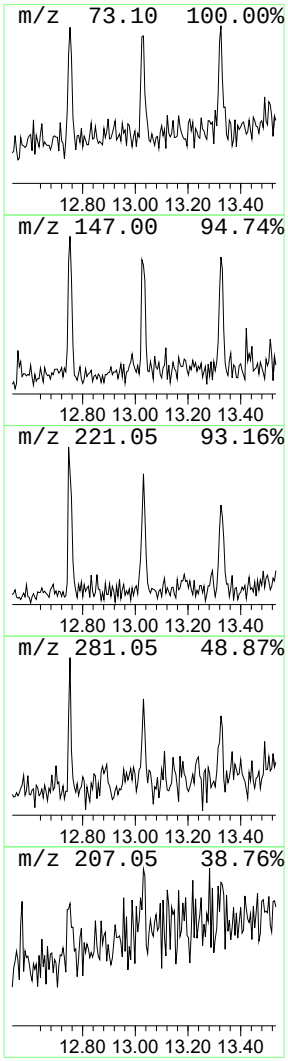
Peak Number 83 Siloxane Concentration Rank 23

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.031	0.00	200437	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
3	Trisiloxane, octamethyl- $$ Octa...	236	C8H24O2Si3	000107-51-7	12
4	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	12
5	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	10





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

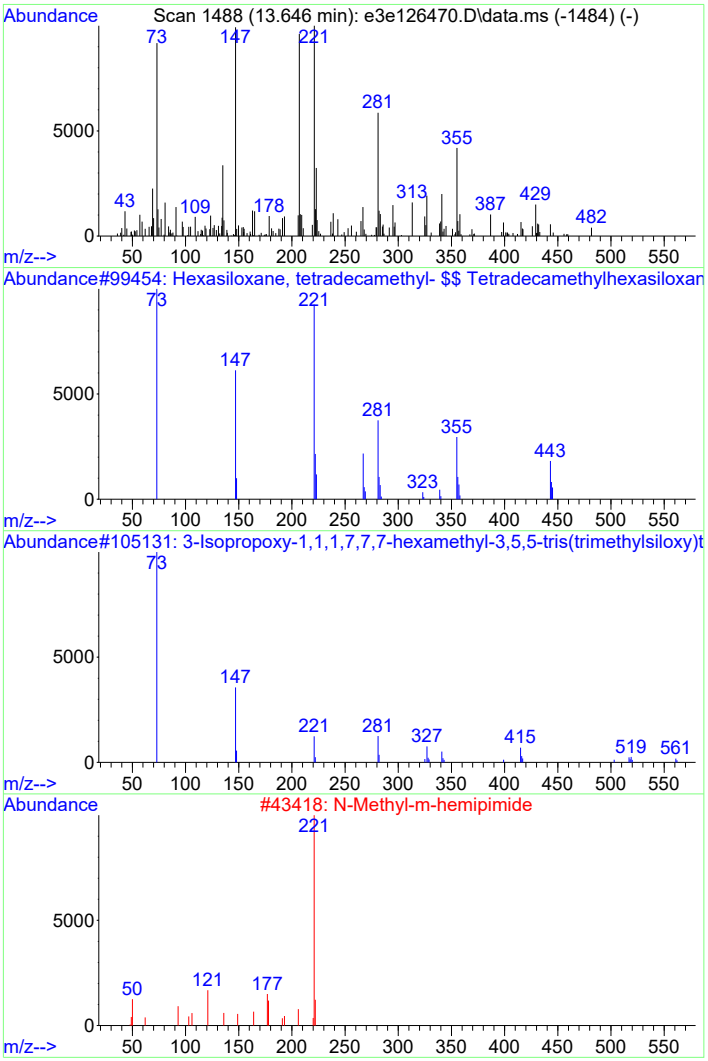
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

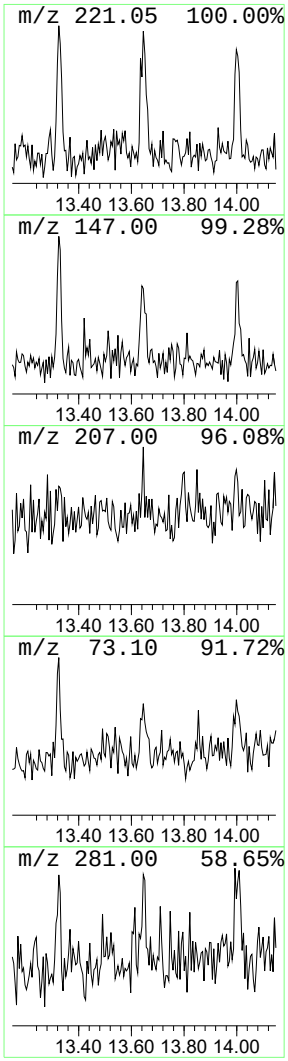
****

Peak Number 86 Siloxane Concentration Rank 27

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.646	0.00	185974	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexasiloxane, tetradecamethyl- $...	458	C14H42O5Si6	000107-52-8	47
2	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	12
3	N-Methyl-m-hemipimide	221	C11H11NO4	092288-92-1	11
4	3,3,7,11-Tetramethyltricyclo[5.4...	222	C15H26O	000000-00-0	11
5	1-Benzazirene-1-carboxylic acid,...	265	C15H23NO3	000000-00-0	11





AECOM_e3g_TPHEXT.M Wed Jan 01 07:26:35 2025 38

Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126470.D
Acq On : 31 Dec 2024 12:06 pm
Operator : (b) (6)
Sample : da69622-1t, MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
2(3H)-Furanone,...	6.553	0.0		118947	0	0.000	1	1.0
Ethanone, 1-(2-...	6.708	0.0		47252	0	0.000	1	1.0
Cyclopentasilox...	7.088	0.0		3265040	0	0.000	1	1.0
Cyclopentasilox...	7.190	0.0		3735650	0	0.000	1	1.0
3-Pentanol, 2-m...	7.430	0.0		32873	0	0.000	1	1.0
Benzene, 1,3-bi...	8.217	0.0		89511	0	0.000	1	1.0
Phenol, 2,4,6-t...	8.260	0.0		103540	0	0.000	1	1.0
Alkane	8.286	0.0		90814	0	0.000	1	1.0
3-Bromophenyl i...	8.404	0.0		241716	0	0.000	1	1.0
Siloxane	8.457	0.0		513863	0	0.000	1	1.0
Siloxane	9.014	0.0		782137	0	0.000	1	1.0
Diphenylamine	9.228	0.0		75750	0	0.000	1	1.0
Diisopropylnaph...	9.340	0.0		286420	0	0.000	1	1.0
Diisopropylnaph...	9.372	0.0		250462	0	0.000	1	1.0
Siloxane	9.516	0.0		1274040	0	0.000	1	1.0
Diisopropylnaph...	9.543	0.0		294744	0	0.000	1	1.0
Phenol, 2,5-dic...	9.864	0.0		33984	0	0.000	1	1.0
Siloxane	10.410	0.0		280388	0	0.000	1	1.0
Siloxane	10.806	0.0		203078	0	0.000	1	1.0
Hexadecanoic ac...	10.864	0.0		122555	0	0.000	1	1.0
Tetradecanamide	10.913	0.0		306163	0	0.000	1	1.0
Siloxane	11.175	0.0		206274	0	0.000	1	1.0
Dodecanamide	11.442	0.0		2079780	0	0.000	1	1.0
9-Octadecenamide,	11.496	0.0		94606	0	0.000	1	1.0
Siloxane	11.522	0.0		193199	0	0.000	1	1.0
Octadecane, 5-m...	11.715	0.0		101741	0	0.000	1	1.0
Siloxane	11.854	0.0		244143	0	0.000	1	1.0
Alkane	11.977	0.0		102919	0	0.000	1	1.0
Siloxane	12.169	0.0		211075	0	0.000	1	1.0
Siloxane	12.469	0.0		243140	0	0.000	1	1.0
Squalene	12.560	0.0		582102	0	0.000	1	1.0
Alkane	12.961	0.0		94515	0	0.000	1	1.0
Siloxane	13.031	0.0		200437	0	0.000	1	1.0
Siloxane	13.646	0.0		185974	0	0.000	1	1.0

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 01 06:41:08 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	10.116	230	32545692m	32545692.00		0.00
Target Compounds						Qvalue
13) Saturated Hydrocarbons	10.137	85	4256193m	4256193.00	ug/l	
29) n-Alkane	10.126	57	11189230m	11189230.00		
34) n-Tetradecane (C14)	8.281	57	29348m	29348.00		
35) n-Hexadecane (C16)	8.982	57	104278	104278.00		# 69
36) n-Octadecane (C18)	9.656	57	121103	121103.00		# 63
37) n-Eicosane (C20)	10.292	57	56480	56480.00		# 79
38) n-Heneicosane (C21)	10.597	57	47318	47318.00		# 51
39) n-Docosane (C22)	10.886	57	27091	27091.00		# 69
40) n-Tricosane (C23)	11.169	57	25097	25097.00		# 73
41) n-Tetracosane (C24)	11.378	57	9654	9654.00		96
42) n-Pentacosane (C25)	11.720	57	35731	35731.00		# 90
43) n-Hexacosane (C26)	11.982	57	30253	30253.00		# 82
53) Siloxane	7.864	429	84741m	84741.00		

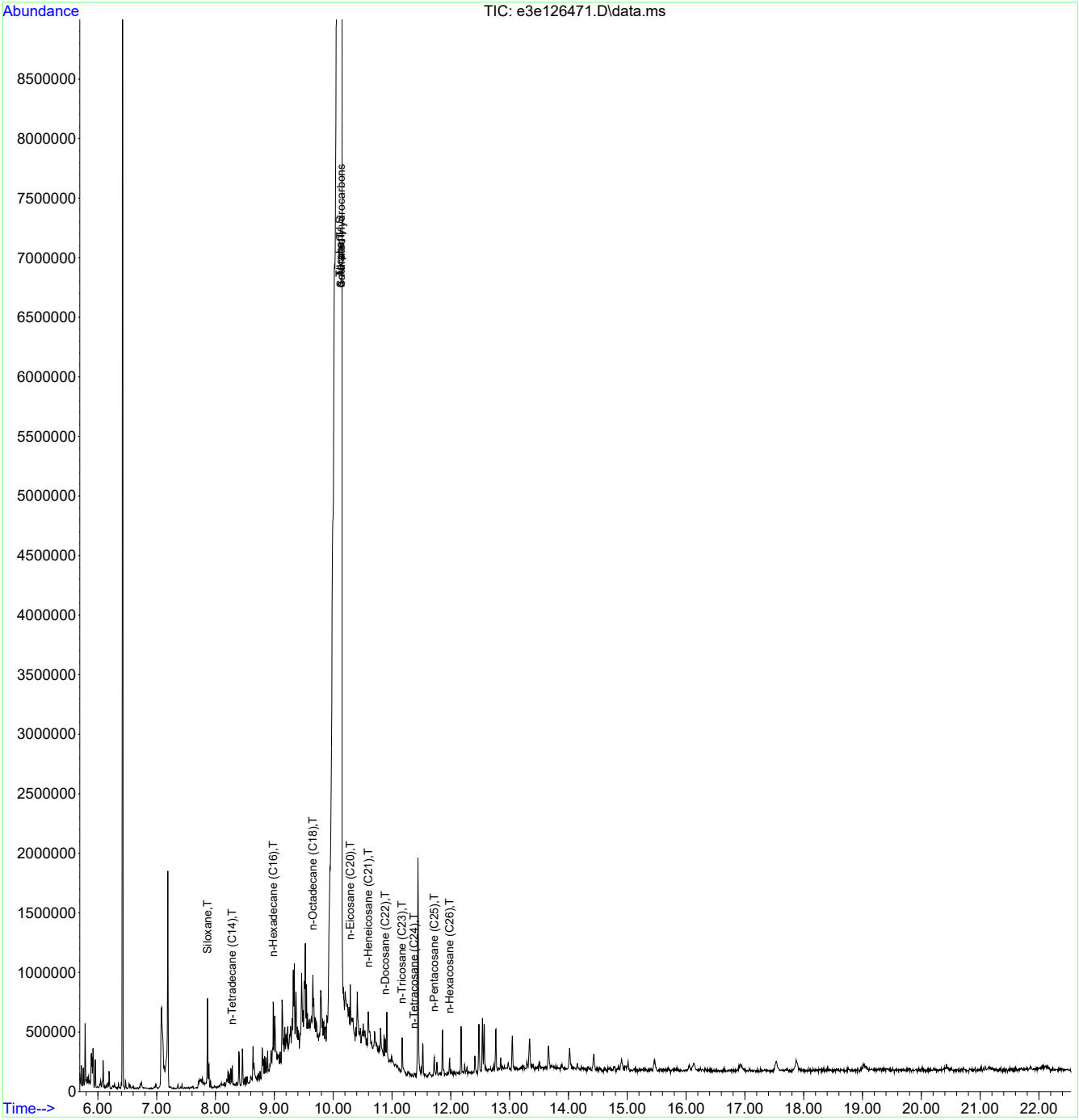
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Appendix C. Tier 1 Analysis Tech Memos

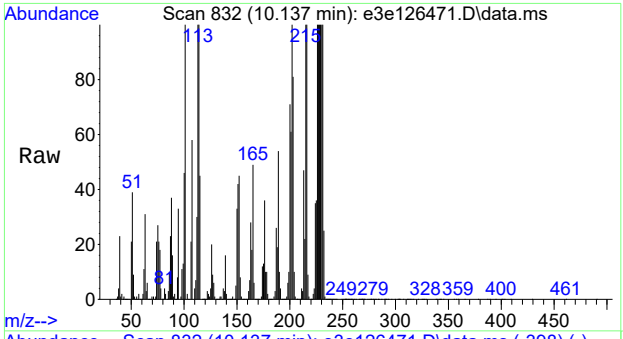
Quantitation Report (QT/LSC Reviewed)

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 01 06:41:08 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



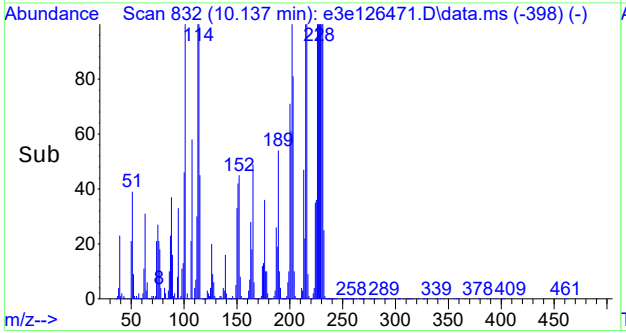
(b) (4)

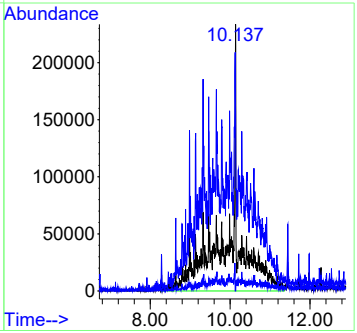


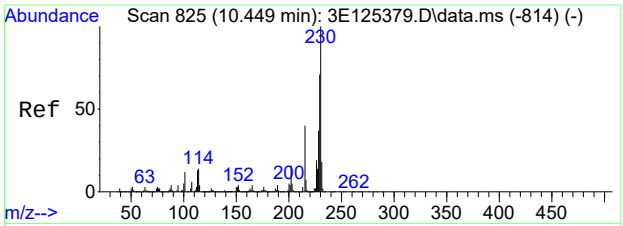
#13
Saturated Hydrocarbons
Concen: 4256193.00 ug/l m
RT: 10.137 min Scan# 832
Delta R.T. 2.220 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 85 Resp: 4256193

Ion	Ratio	Lower	Upper
85	100		
83	0.0	0.0	0.0
57	0.2	0.0	0.0#



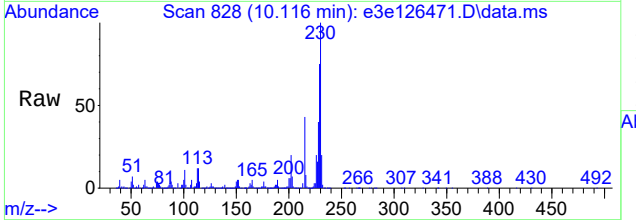


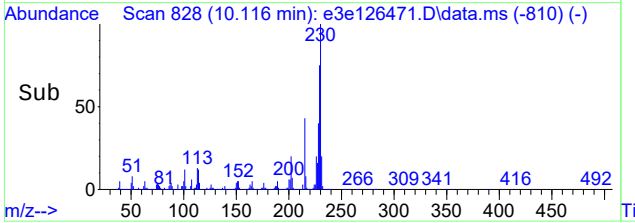


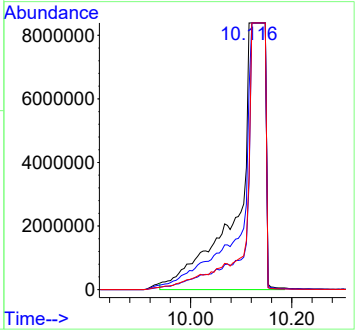
#26
o-Terphenyl
Concen: 32545692.00 m
RT: 10.116 min Scan# 828
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

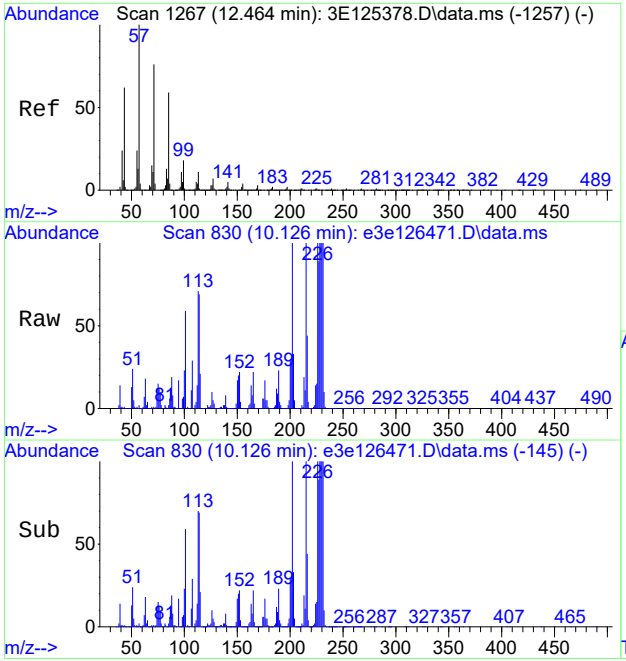
Tgt Ion:230 Resp:32545692

Ion	Ratio	Lower	Upper
230	100		
229	0.0	43.0	83.0#
228	0.0	27.3	67.3#
215	0.0	30.0	70.0#





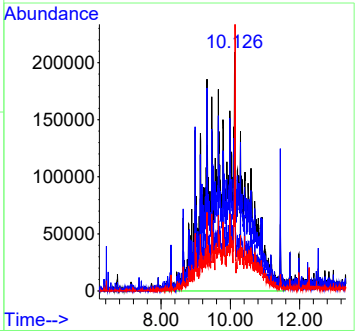


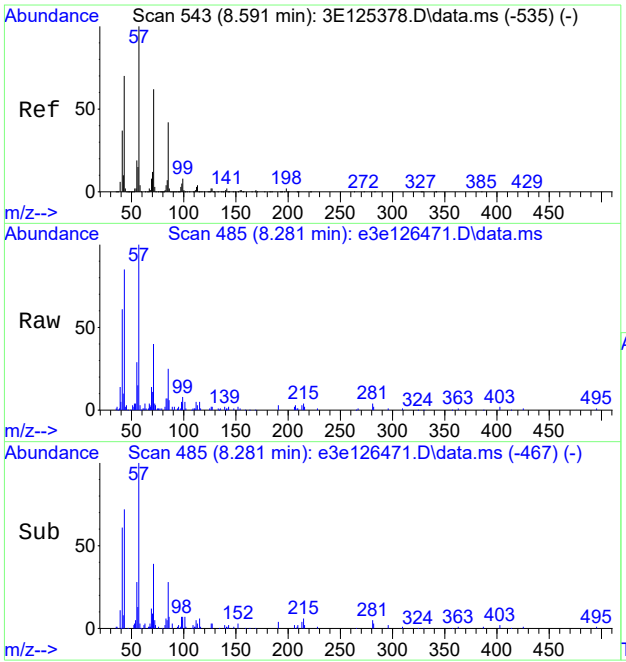


#29
n-Alkane
Concen: 11189230.00 m
RT: 10.126 min Scan# 830
Delta R.T. 3.562 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp:11189230

Ion	Ratio	Lower	Upper
57	100		
43	0.0	0.0	20.0
71	0.0	162.1	202.1#
85	0.0	0.0	20.0

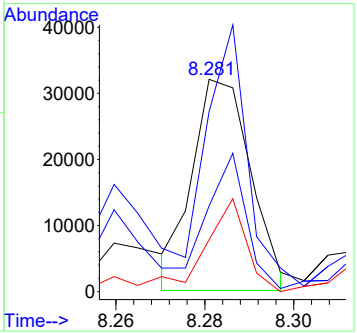


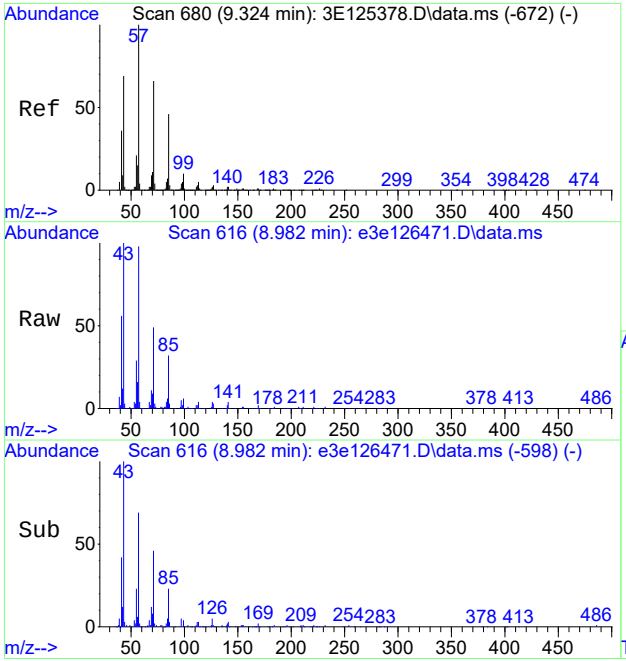


#34
n-Tetradecane (C14)
Concen: 29348.00 m
RT: 8.281 min Scan# 485
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 29348

Ion	Ratio	Lower	Upper
57	100		
43	0.0	57.6	86.4#
71	0.0	48.6	73.0#
85	0.0	32.5	48.7#

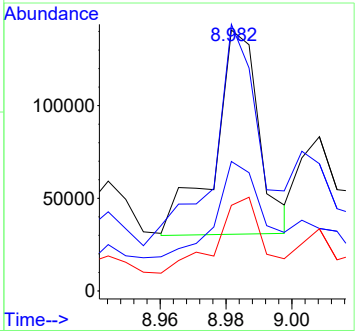


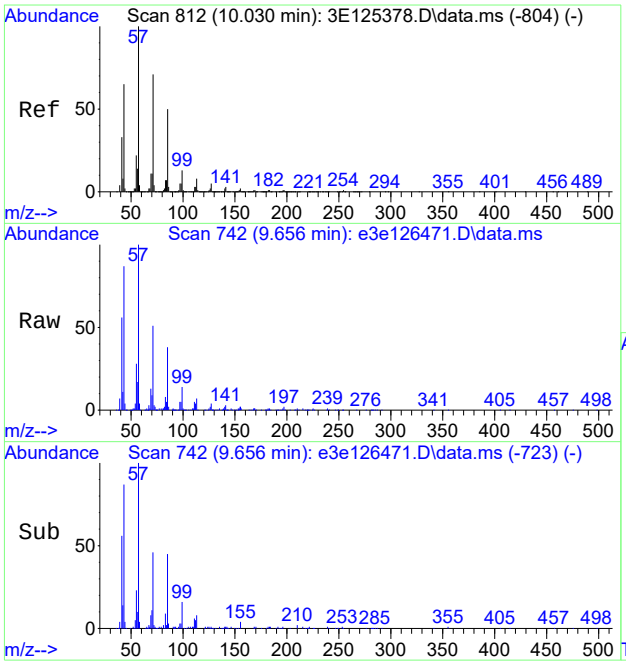


#35
n-Hexadecane (C16)
Concen: 104278.00
RT: 8.982 min Scan# 616
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 104278

Ion	Ratio	Lower	Upper
57	100		
43	111.3	54.8	82.2#
71	48.9	52.3	78.5#
85	37.8	36.8	55.2

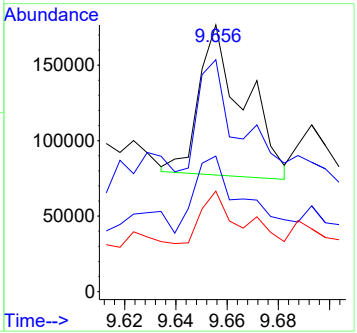


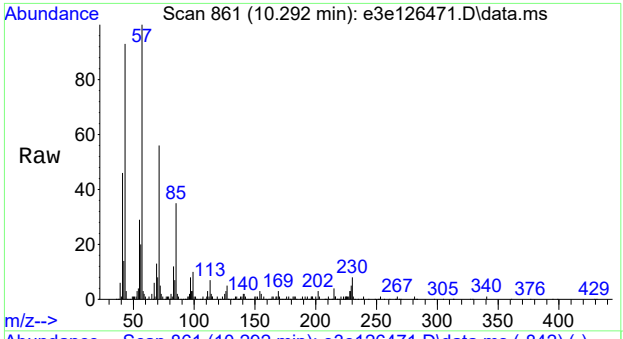


#36
n-Octadecane (C18)
Concen: 121103.00
RT: 9.656 min Scan# 742
Delta R.T. 0.000 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 121103

Ion	Ratio	Lower	Upper
57	100		
43	119.0	53.4	80.0#
71	55.4	55.1	82.7
85	31.3	39.5	59.3#

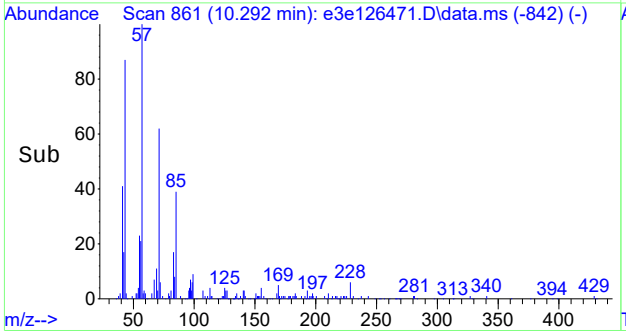


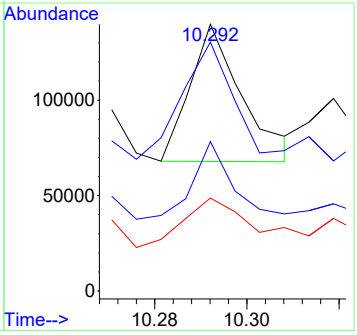


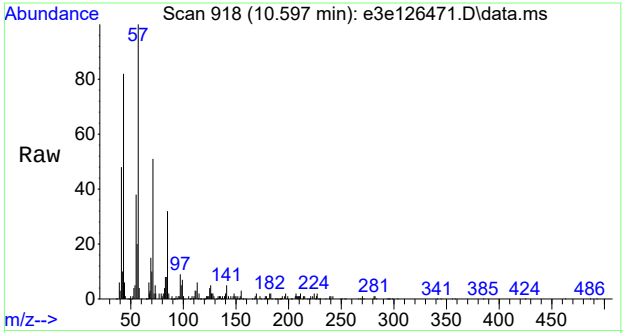
#37
n-Eicosane (C20)
Concen: 56480.00
RT: 10.292 min Scan# 861
Delta R.T. 0.000 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 56480

Ion	Ratio	Lower	Upper
57	100		
43	84.7	52.6	79.0#
71	44.1	56.2	84.2#
85	50.2	41.5	62.3



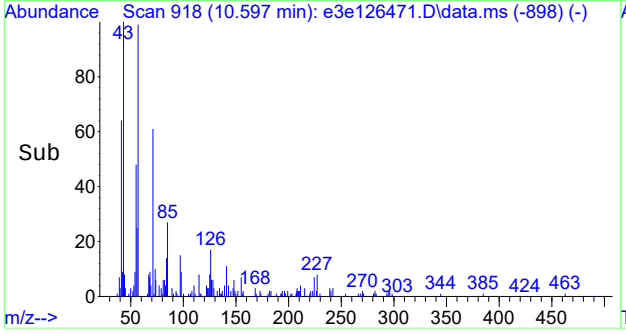


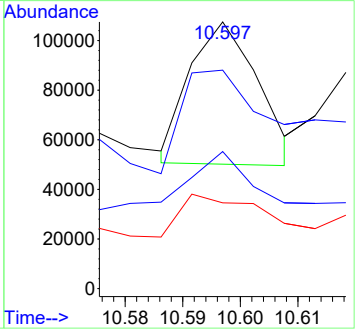


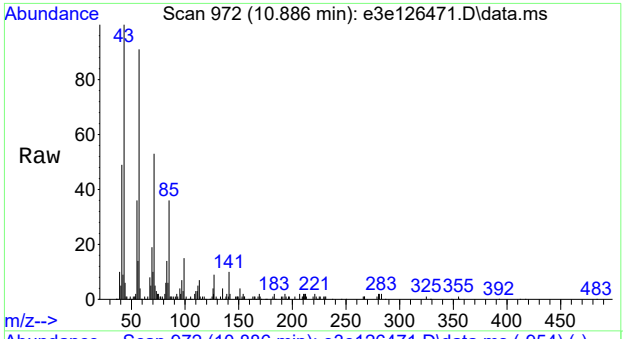
#38
n-Heneicosane (C21)
Concen: 47318.00
RT: 10.597 min Scan# 918
Delta R.T. 0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 47318

Ion	Ratio	Lower	Upper
57	100		
43	147.9	42.4	63.6#
71	59.2	52.1	78.1
85	41.9	41.4	62.0



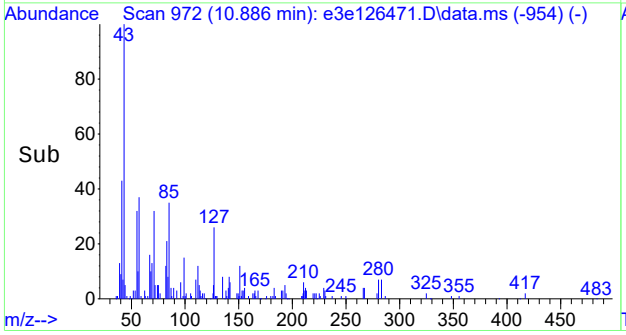


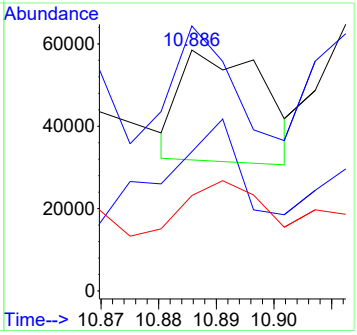


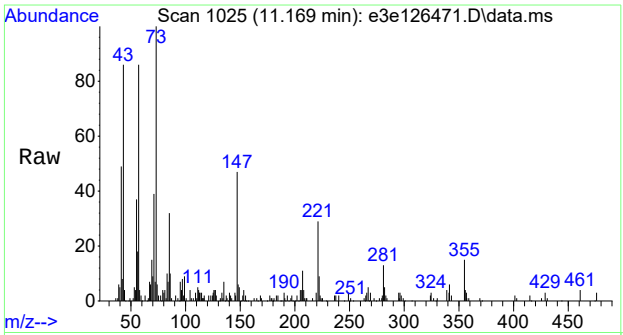
#39
n-Docosane (C22)
Concen: 27091.00
RT: 10.886 min Scan# 972
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 27091

Ion	Ratio	Lower	Upper
57	100		
43	110.4	50.8	76.2#
71	86.3	57.0	85.6#
85	44.1	43.1	64.7



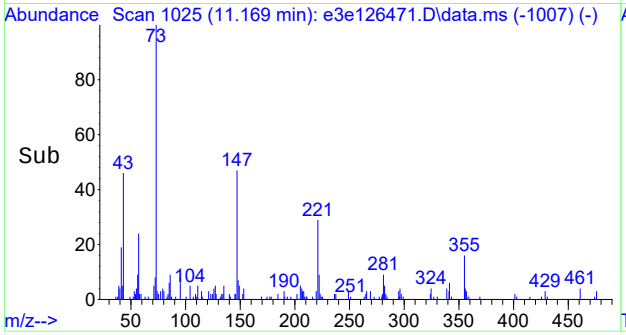


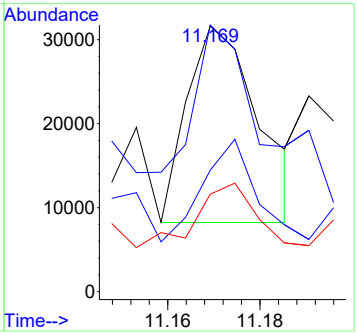


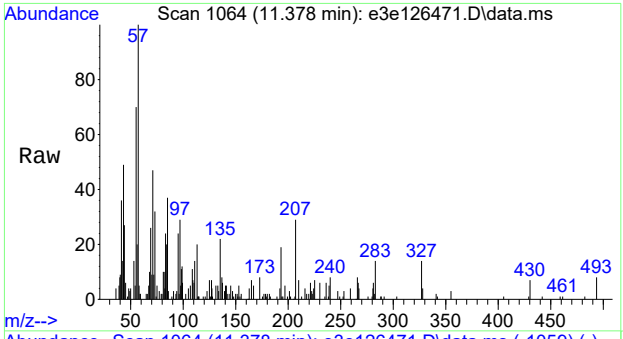
#40
n-Tricosane (C23)
Concen: 25097.00
RT: 11.169 min Scan# 1025
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 25097

Ion	Ratio	Lower	Upper
57	100		
43	92.0	49.6	74.4#
71	40.1	43.1	64.7#
85	33.0	36.6	54.8#



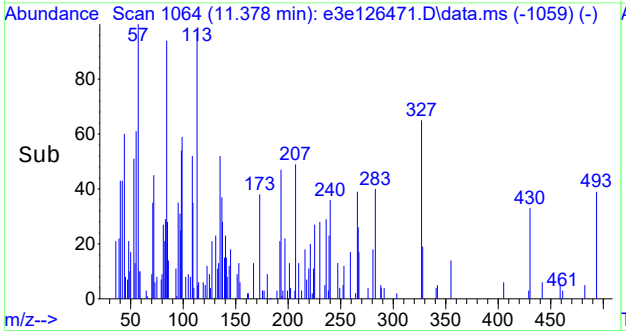


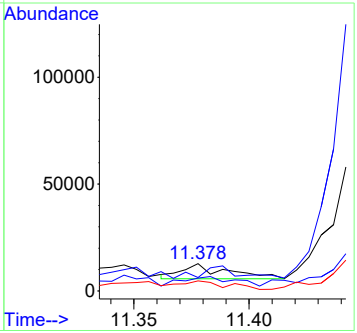


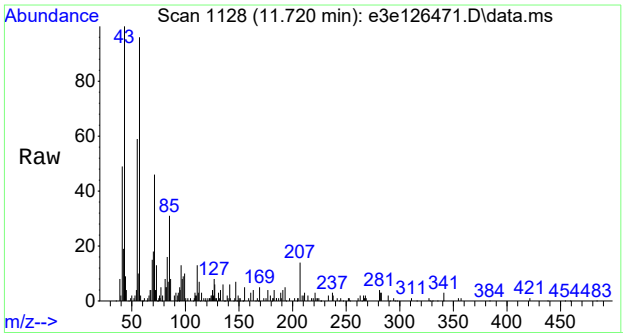
#41
n-Tetracosane (C24)
Concen: 9654.00
RT: 11.378 min Scan# 1064
Delta R.T. -0.075 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 9654

Ion	Ratio	Lower	Upper
57	100		
43	66.0	50.7	76.1
71	69.5	57.8	86.8
85	50.7	44.2	66.2



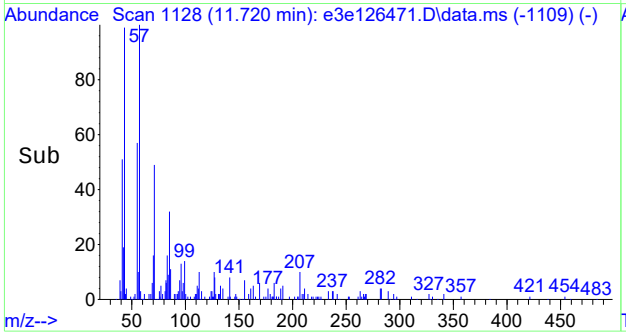


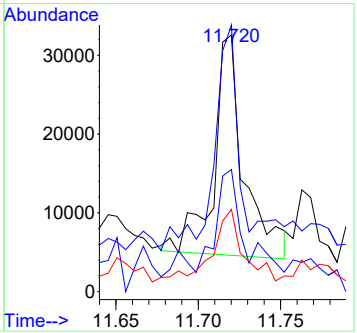


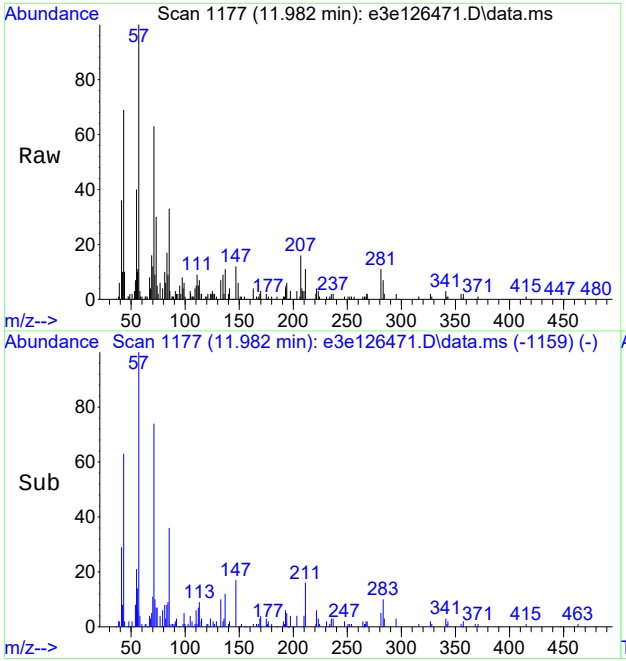
#42
n-Pentacosane (C25)
Concen: 35731.00
RT: 11.720 min Scan# 1128
Delta R.T. 0.000 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 35731

Ion	Ratio	Lower	Upper
57	100		
43	85.8	63.9	95.9
71	62.5	56.4	84.6
85	32.4	34.0	51.0#



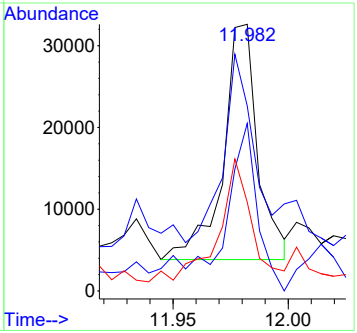


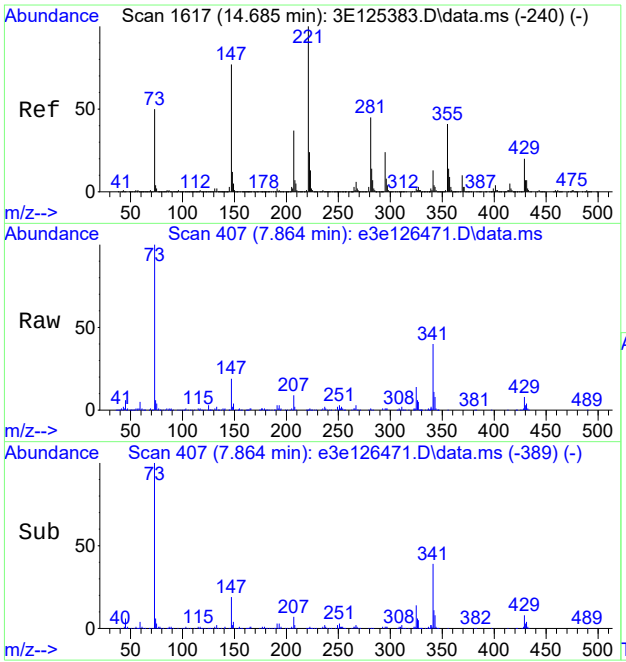


#43
n-Hexacosane (C26)
Concen: 30253.00
RT: 11.982 min Scan# 1177
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion: 57 Resp: 30253

Ion	Ratio	Lower	Upper
57	100		
43	84.5	50.5	75.7#
71	54.0	58.6	87.8#
85	55.2	45.3	67.9

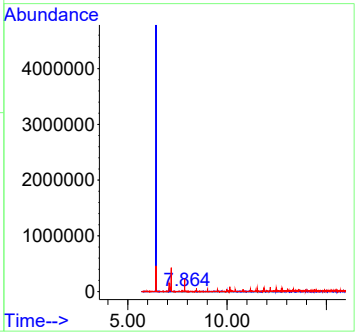




#53
Siloxane
Concen: 84741.00 m
RT: 7.864 min Scan# 407
Delta R.T. -0.005 min
Lab File: e3e126471.D
Acq: 31 Dec 2024 12:39 pm

Tgt Ion:429 Resp: 84741

Ion	Ratio	Lower	Upper
429	100		
355	0.0	0.0	20.0
281	2.7	0.0	20.0
73	182.9	0.0	20.0#



LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126471.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.532	155	158	160	rBV4	32775	24698	0.00%	0.005%
2	6.601	165	171	175	rVB8	23410	29480	0.01%	0.005%
3	6.676	183	185	187	rVB3	13193	9967	0.00%	0.002%
4	6.741	187	197	204	rBV8	56479	120386	0.02%	0.022%
5	6.901	226	227	233	rBV6	8371	9799	0.00%	0.002%
6	6.987	233	243	249	rVV6	42030	79602	0.02%	0.015%
7	7.083	250	261	272	rVV2	681517	1771959	0.34%	0.326%
8	7.190	272	281	285	rVV	1826020	1825069	0.35%	0.336%
9	7.222	286	287	294	rVB7	16946	27323	0.01%	0.005%
10	7.275	294	297	299	rVB4	10324	7433	0.00%	0.001%
11	7.308	299	303	305	rVB5	9839	10786	0.00%	0.002%
12	7.361	305	313	316	rBV4	38426	41762	0.01%	0.008%
13	7.404	317	321	322	rBV4	13031	11088	0.00%	0.002%
14	7.431	324	326	330	rVB2	36179	25809	0.00%	0.005%
15	7.479	330	335	336	rBV5	11218	11771	0.00%	0.002%
16	7.500	337	339	342	rBV4	9517	7005	0.00%	0.001%
17	7.580	350	354	355	rBV4	15830	17438	0.00%	0.003%
18	7.618	357	361	363	rVB5	17632	20022	0.00%	0.004%
19	7.671	363	371	374	rBV9	9551	20451	0.00%	0.004%
20	7.725	374	381	384	rBV6	72662	133693	0.03%	0.025%
21	7.751	384	386	388	rVB3	20891	15459	0.00%	0.003%
22	7.864	403	407	410	rBV	713166	497874	0.10%	0.092%
23	7.891	410	412	415	rVB	190676	136859	0.03%	0.025%
24	7.917	415	417	420	rVB3	56905	39842	0.01%	0.007%
25	7.949	422	423	425	rBV2	11326	8076	0.00%	0.001%
26	7.981	425	429	435	rVB9	20564	34488	0.01%	0.006%
27	8.067	438	445	446	rBV7	20171	27349	0.01%	0.005%
28	8.099	446	451	456	rBV9	34461	60133	0.01%	0.011%
29	8.153	459	461	463	rBV3	26754	9179	0.00%	0.002%
30	8.190	463	468	470	rBV5	44892	48321	0.01%	0.009%
31	8.211	470	472	474	rVV3	111574	85574	0.02%	0.016%
32	8.233	474	476	479	rVV	92784	73389	0.01%	0.013%
33	8.260	479	481	484	rVV3	140265	111415	0.02%	0.020%
34	8.286	484	486	489	rVB	164468	110840	0.02%	0.020%
35	8.361	497	500	502	rVB3	26373	22097	0.00%	0.004%
36	8.399	502	507	513	rBV2	285204	247674	0.05%	0.046%
37	8.457	513	518	522	rBV2	308123	280703	0.05%	0.052%
38	8.490	522	524	526	rVB2	39871	26342	0.01%	0.005%
39	8.511	526	528	530	rVB3	65340	33425	0.01%	0.006%
40	8.538	530	533	537	rBV5	68715	60348	0.01%	0.011%

AECOM_e3g_TPHEXT.M Wed Jan 01 08:13:56 2025

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	8.602	540	545	547	rBV6	59854	78318	0.02%	0.014%
42	8.639	549	552	564	rVB2	283707	376199	0.07%	0.069%
43	8.714	564	566	567	rBV2	38405	23069	0.00%	0.004%
44	8.730	567	569	572	rVB4	52987	44326	0.01%	0.008%
45	8.757	572	574	577	rBV4	74298	53940	0.01%	0.010%
46	8.794	577	581	587	rBV4	262286	378170	0.07%	0.070%
47	8.837	587	589	591	rBV	147199	83749	0.02%	0.015%
48	8.859	591	593	595	rBV2	129102	79533	0.02%	0.015%
49	8.885	595	598	603	rBV	179658	117781	0.02%	0.022%
50	8.944	603	609	612	rBV4	176004	233740	0.04%	0.043%
51	8.982	612	616	619	rBV	511993	490302	0.09%	0.090%
52	9.008	619	621	628	rVB4	367146	424510	0.08%	0.078%
53	9.099	636	638	641	rBV	102671	82783	0.02%	0.015%
54	9.131	641	644	650	rBV2	529630	728079	0.14%	0.134%
55	9.180	650	653	655	rVV	230988	192094	0.04%	0.035%
56	9.201	655	657	660	rVV3	141667	168416	0.03%	0.031%
57	9.228	660	662	664	rVB3	186632	119031	0.02%	0.022%
58	9.324	673	680	681	rBV	618148	688147	0.13%	0.127%
59	9.367	686	688	691	rVB2	385150	327476	0.06%	0.060%
60	9.463	700	706	712	rBV	573875	870587	0.17%	0.160%
61	9.527	712	718	720	rVV3	701777	858011	0.17%	0.158%
62	9.656	739	742	747	rVB	447331	495149	0.10%	0.091%
63	9.789	763	767	774	rBV2	385003	609228	0.12%	0.112%
64	9.891	784	786	789	rBV3	218471	248682	0.05%	0.046%
65	10.142	789	833	842	rVV5	344001443	519682649	100.00%	95.581%
66	10.292	859	861	864	rBV	332296	218791	0.04%	0.040%
67	10.410	880	883	891	rBV5	368429	412872	0.08%	0.076%
68	10.597	915	918	932	rVB3	310843	599142	0.12%	0.110%
69	10.704	936	938	943	rVB3	126435	136077	0.03%	0.025%
70	10.806	954	957	966	rVV5	227691	298900	0.06%	0.055%
71	10.864	966	968	970	rVV2	200390	136200	0.03%	0.025%
72	10.886	970	972	975	rVV3	169880	165152	0.03%	0.030%
73	10.912	975	977	983	rVB	421071	380264	0.07%	0.070%
74	11.175	1023	1026	1039	rVB	320832	409542	0.08%	0.075%
75	11.378	1062	1064	1069	rVB6	34604	51460	0.01%	0.009%
76	11.442	1071	1076	1084	rVV	1840762	1865007	0.36%	0.343%
77	11.495	1084	1086	1088	rVV2	81411	73517	0.01%	0.014%
78	11.522	1088	1091	1097	rVB2	278807	285282	0.05%	0.052%
79	11.720	1124	1128	1132	rBV2	155585	155448	0.03%	0.029%
80	11.763	1133	1136	1141	rVB7	111780	93525	0.02%	0.017%
81	11.859	1150	1154	1160	rVB2	388376	381389	0.07%	0.070%
82	11.982	1173	1177	1179	rBV2	128858	106684	0.02%	0.020%
83	12.095	1197	1198	1204	rBV6	29693	49927	0.01%	0.009%
84	12.175	1209	1213	1217	rBV	404741	379589	0.07%	0.070%
85	12.234	1222	1224	1227	rBV4	77293	66126	0.01%	0.012%

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LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	12.410	1254	1257	1265	rVB8	152864	174364	0.03%	0.032%
87	12.480	1265	1270	1276	rBV3	418896	470468	0.09%	0.087%
88	12.538	1278	1281	1284	rVV	452596	394206	0.08%	0.073%
89	12.565	1284	1286	1295	rVB	395550	405437	0.08%	0.075%
90	12.768	1319	1324	1329	rVB	349050	360179	0.07%	0.066%
91	12.849	1336	1339	1342	rVB2	104004	85175	0.02%	0.016%
92	13.047	1372	1376	1381	rBV2	291345	333079	0.06%	0.061%
93	13.293	1420	1422	1426	rBV4	53360	48831	0.01%	0.009%
94	13.341	1426	1431	1437	rVB2	247977	344206	0.07%	0.063%
95	13.507	1459	1462	1467	rBV6	78599	114944	0.02%	0.021%
96	13.662	1486	1491	1497	rBV4	194959	280889	0.05%	0.052%
97	14.020	1553	1558	1564	rVB5	173347	247678	0.05%	0.046%
98	14.432	1629	1635	1641	rBV9	138964	227102	0.04%	0.042%
99	14.903	1718	1723	1730	rBV10	87171	159408	0.03%	0.029%
100	15.459	1823	1827	1838	rVB10	92434	208885	0.04%	0.038%

Sum of corrected areas: 543708642

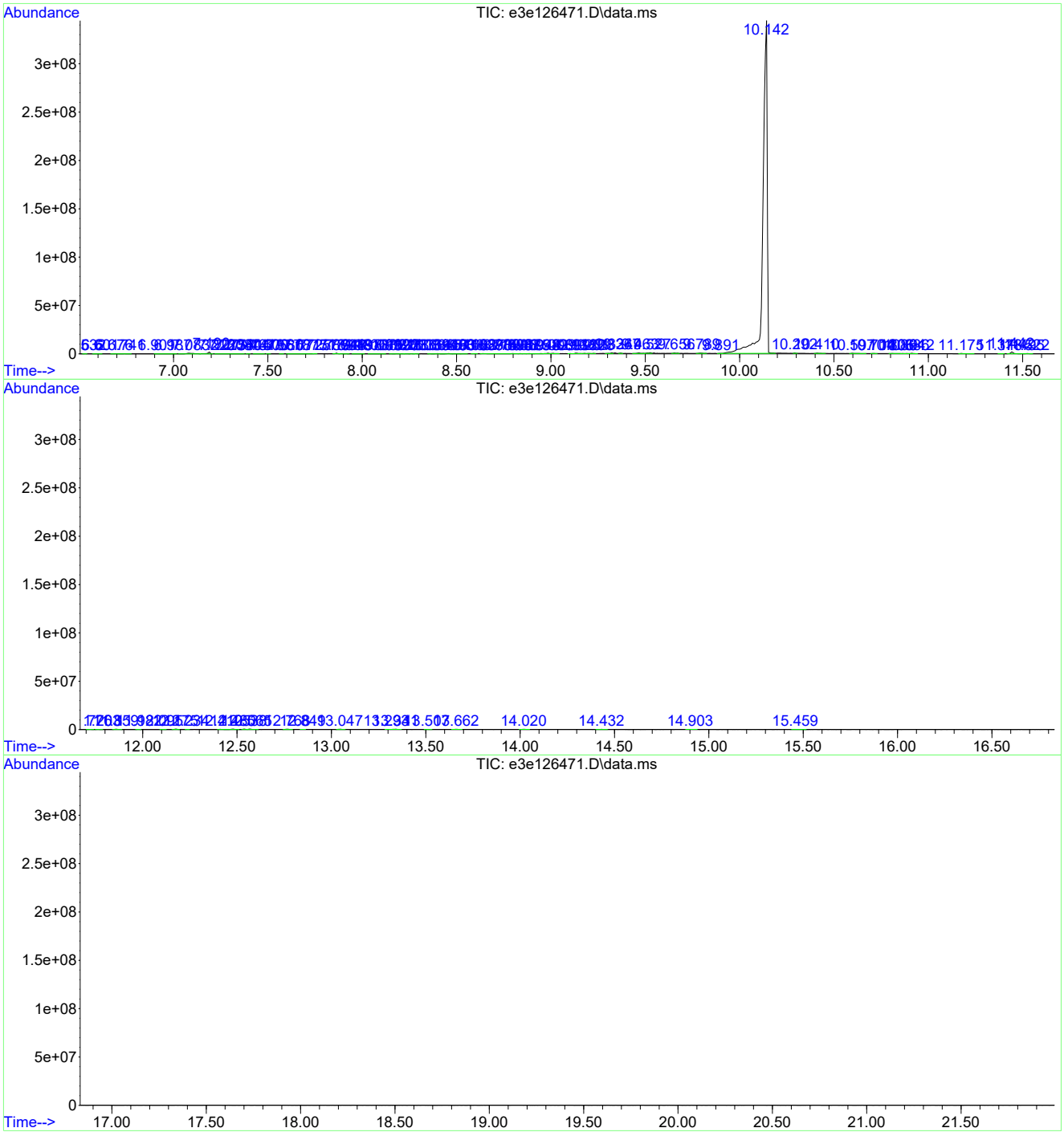
Appendix C. Tier 1 Analysis Tech Memos

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



AECOM_e3g_TPHEXT.M Wed Jan 01 08:13:57 2025 Page: 4

(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

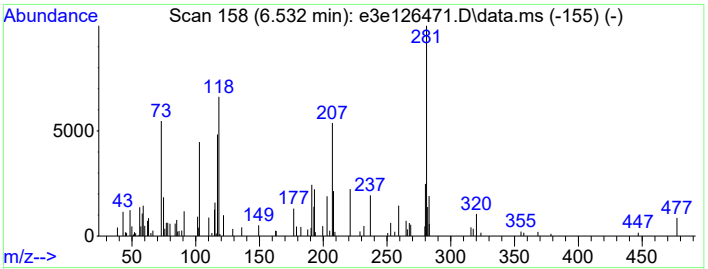
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

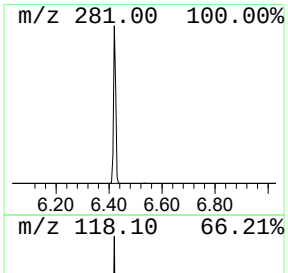
****

Peak Number 1 .alpha.-Methylstyrene Concentration Rank 65

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.532	0.00	24698	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	.alpha.-Methylstyrene $$ Benzene...	118	C9H10	000098-83-9	30
2	.alpha.-Methylstyrene	118	C9H10	000098-83-9	25
3	Silicic acid, diethyl bis(trimet...	296	C10H28O4Si3	003555-45-1	25
4	.alpha.-Methylstyrene	118	C9H10	000098-83-9	22
5	.alpha.-Methylstyrene	118	C9H10	000098-83-9	14





AECOM_e3g_TPHEXT.M Wed Jan 01 08:13:59 2025 5

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

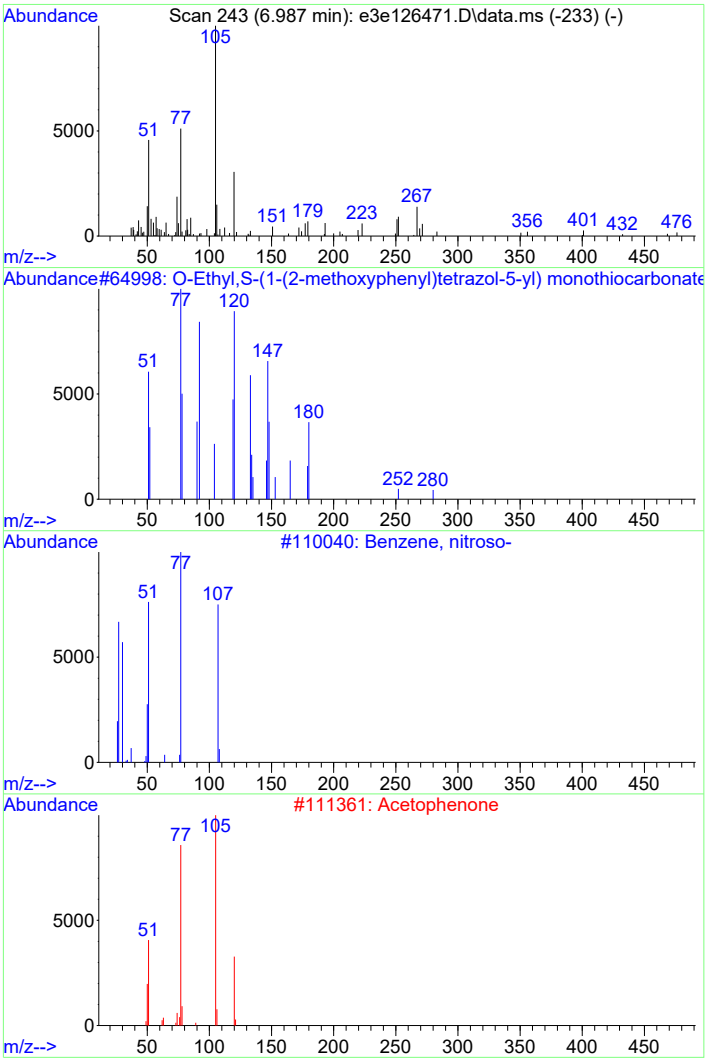
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

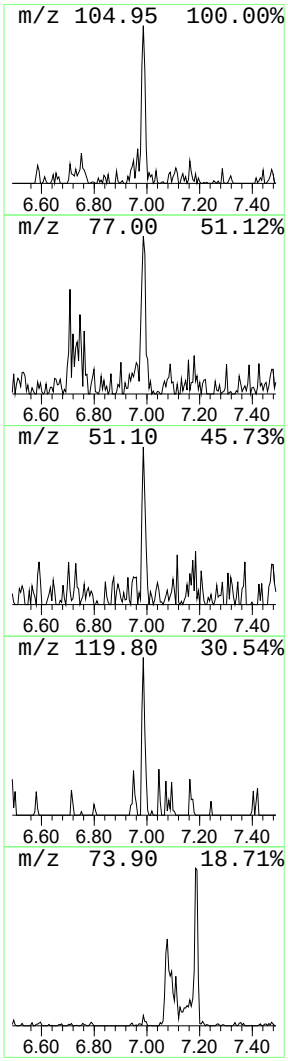
****

Peak Number 6 Acetophenone Concentration Rank 44

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.987	0.00	79602	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	O-Ethyl,S-(1-(2-methoxyphenyl)te...	280	C11H12N4O3S	000000-00-0	43
2	Benzene, nitroso-	107	C6H5NO	000586-96-9	43
3	Acetophenone	120	C8H8O	000098-86-2	37
4	Acetophenone	120	C8H8O	000098-86-2	37
5	2,4-Nonadiyne	120	C9H12	063621-15-8	32





Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

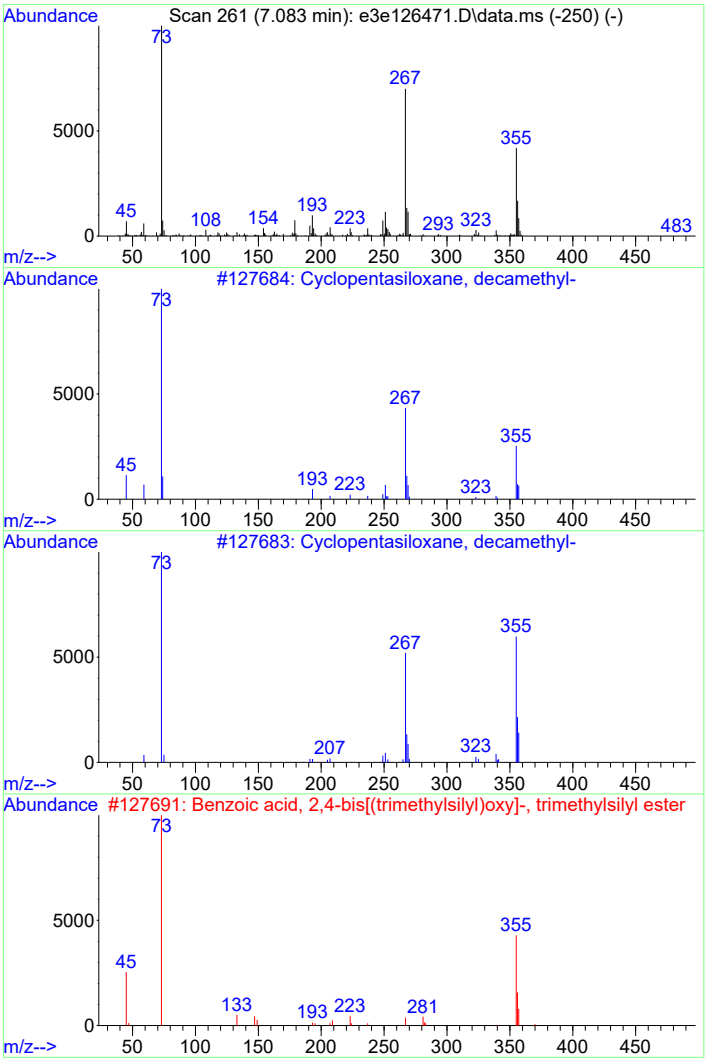
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

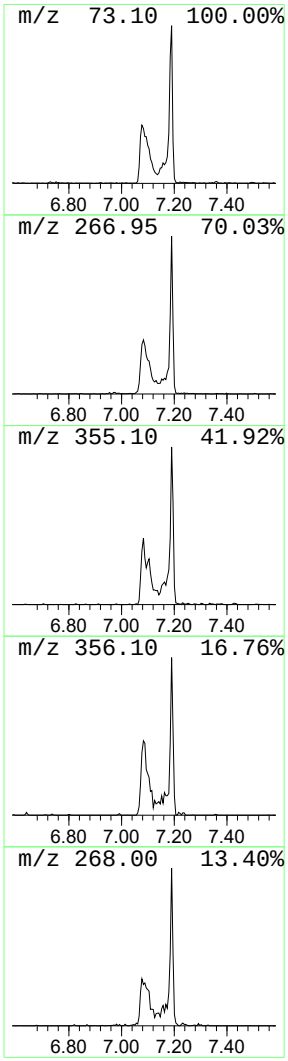
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 7 Cyclopentasiloxane, decamet... Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.083	0.00	1771960	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	72
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	50
3	Benzoic acid, 2,4-bis[(trimethyl...	370	C16H30O4Si3	010586-16-0	37
4	Benzoic acid, 2,6-bis[(trimethyl...	370	C16H30O4Si3	003782-85-2	37
5	Benzeneethanamine, N-[(pentafluo...	563	C24H34F5NO3Si3	055429-13-5	32





AECOM_e3g_TPHEXT.M Wed Jan 01 08:14:02 2025

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

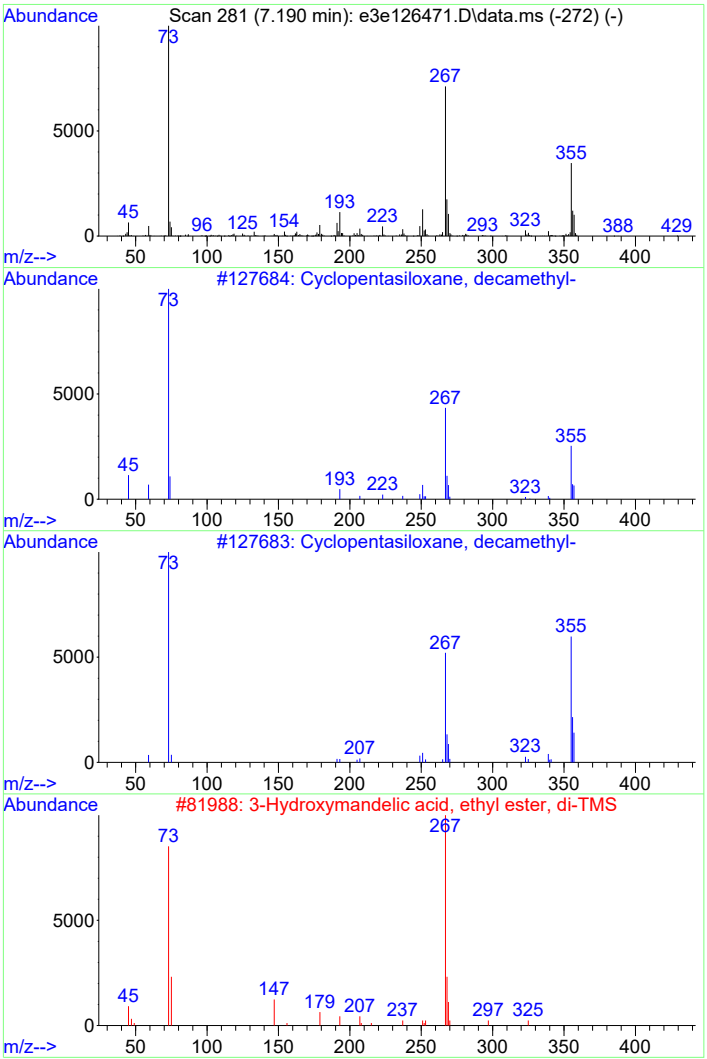
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

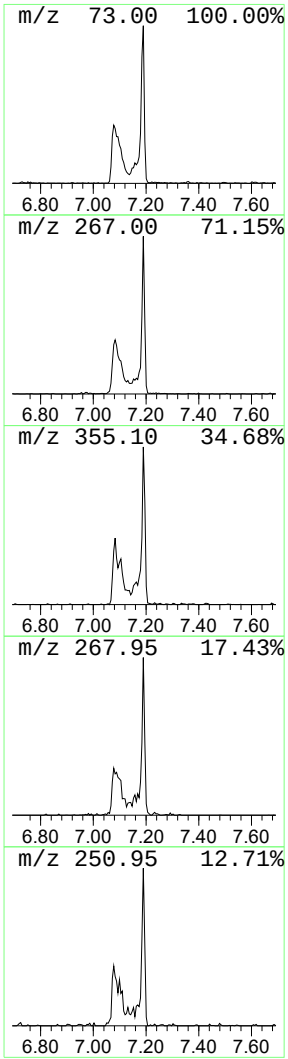
****

Peak Number 8 Cyclopentasiloxane, decamet... Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.190	0.00	1825070	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	87
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	78
3	3-Hydroxymandelic acid, ethyl es...	340	C16H28O4Si2	000000-00-0	43
4	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	43
5	Butanamide, 2,2,3,3,4,4,4-heptaf...	493	C18H26F7NO3Si2	055471-01-7	43





AECOM_e3g_TPHEXT.M Wed Jan 01 08:14:03 2025 8

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

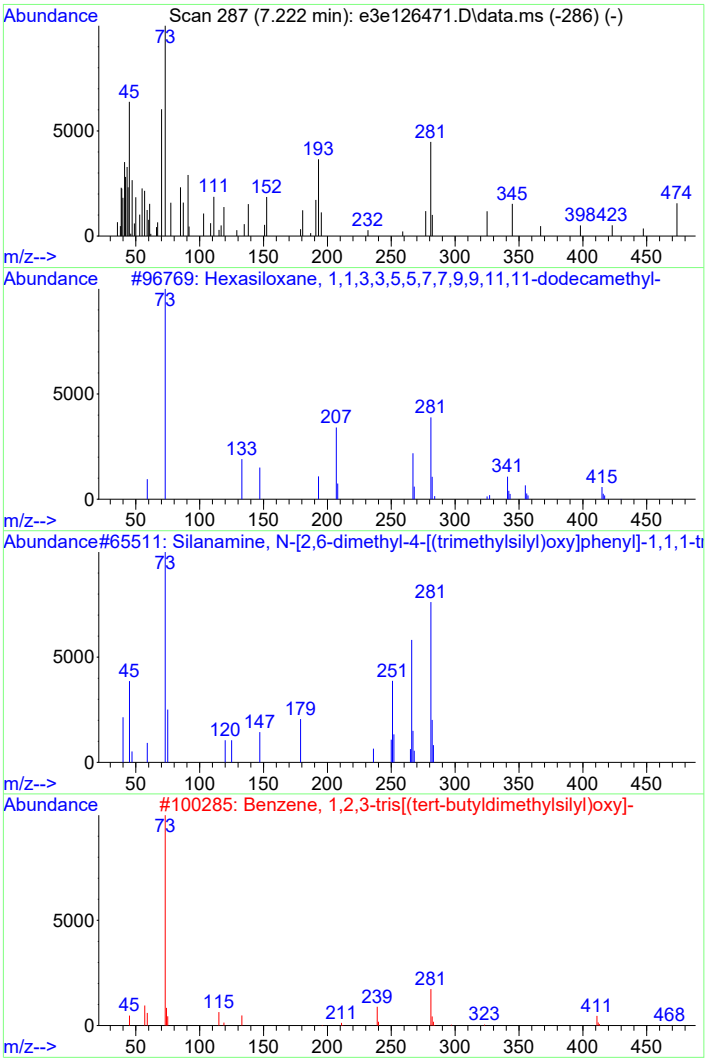
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

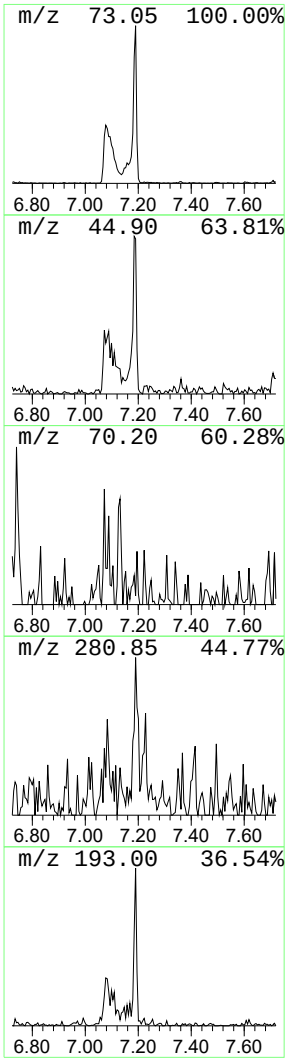
****

Peak Number 9 Siloxane Concentration Rank 62

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.222	0.00	27323	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	7
2	Silanamine, N-[2,6-dimethyl-4-[(...	281	C14H27NOSi2	072088-09-6	5
3	Benzene, 1,2,3-tris[(tert-butyld...	468	C24H48O3Si3	000000-00-0	4
4	Strychane, 1-acetyl-20.alpha.-hy...	338	C21H26N2O2	002111-98-0	4
5	Ethanethiol, 2-amino-, hydrochlo...	113	C2H8ClNS	000156-57-0	4





AECOM_e3g_TPHEXT.M Wed Jan 01 08:14:04 2025

Library Search Compound Report

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Acq On : 31 Dec 2024 12:39 pm
Operator :(b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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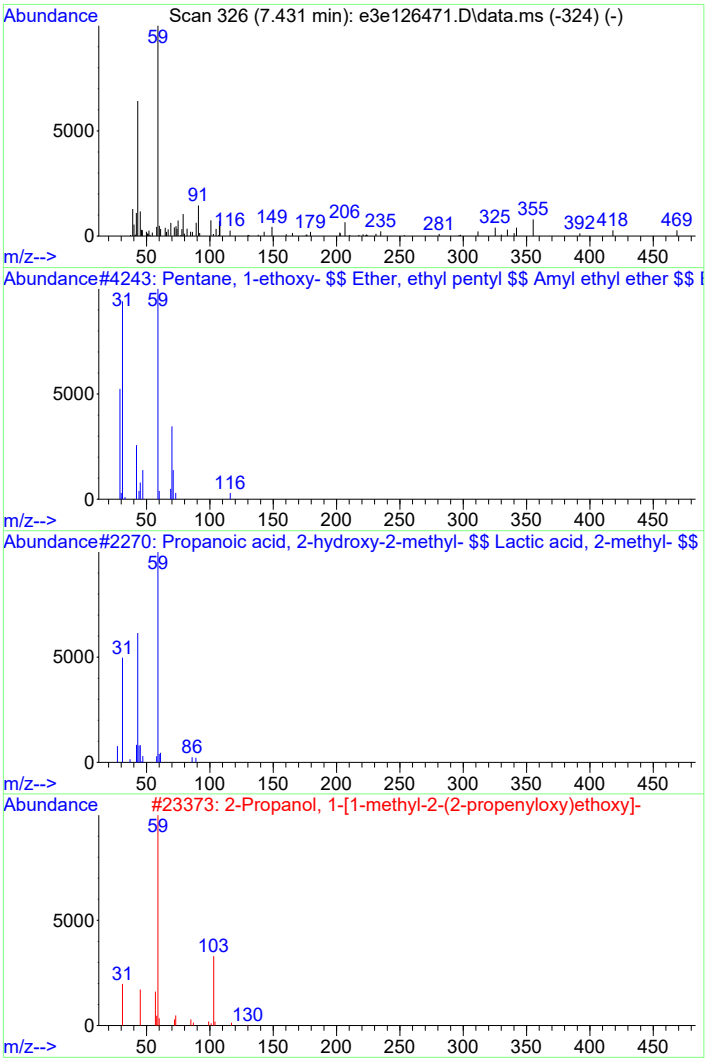
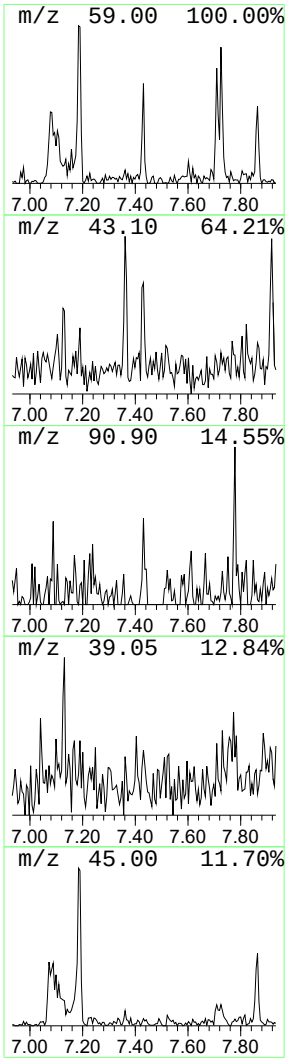
Peak Number 14 Pentane, 1-ethoxy- Concentration Rank 64

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.431	0.00	25809	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 1-ethoxy- $$ Ether, eth...	116	C7H16O	017952-11-3	53
2	Propanoic acid, 2-hydroxy-2-meth...	104	C4H8O3	000594-61-6	53
3	2-Propanol, 1-[1-methyl-2-(2-pro...	174	C9H18O3	055956-25-7	53
4	2,5,8,11,14,17-Hexaoxaoctadecane...	266	C12H26O6	001191-87-3	42
5	1-Butanol, 3-methoxy-	104	C5H12O2	002517-43-3	42





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

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Quant Title : 8270C Calibration

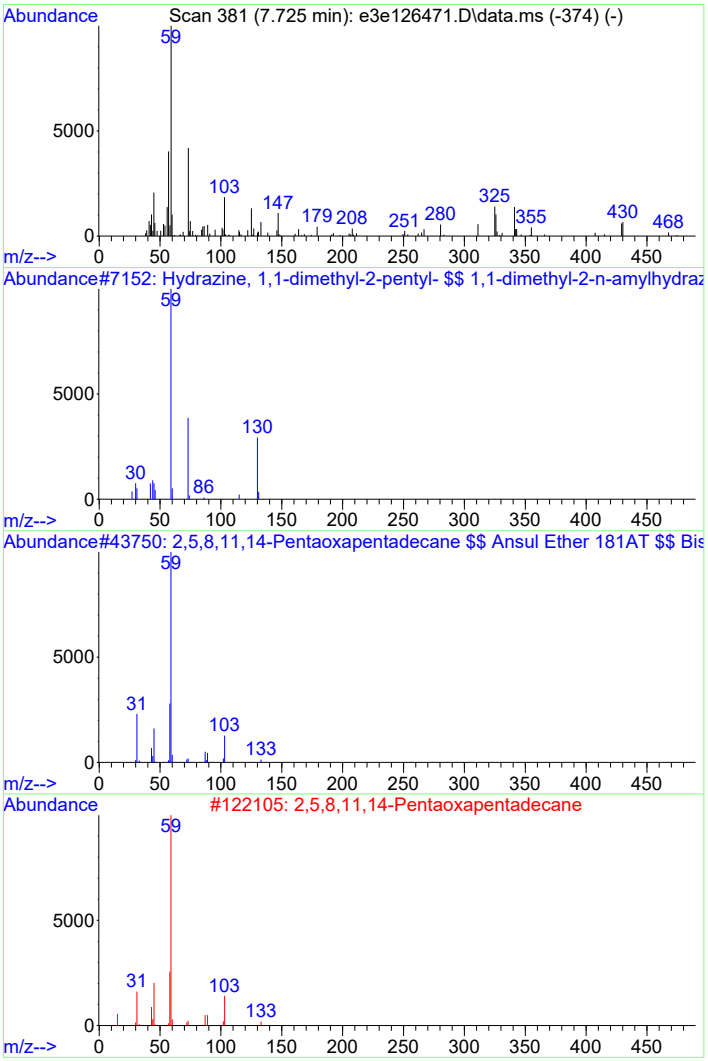
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

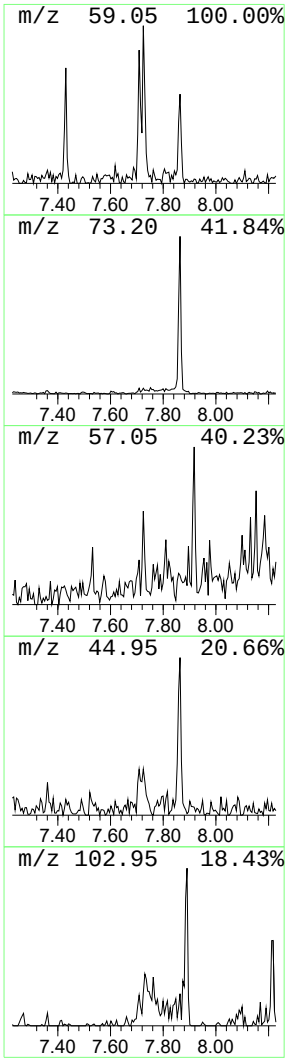
****

Peak Number 20 1-Propene, 3-[2-(2-methoxye... Concentration Rank 35

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.725	0.00	133693	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hydrazine, 1,1-dimethyl-2-pentyl...	130	C7H18N2	067398-36-1	49
2	2,5,8,11,14-Pentaoxapentadecane ...	222	C10H22O5	000143-24-8	38
3	2,5,8,11,14-Pentaoxapentadecane	222	C10H22O5	000143-24-8	38
4	1-Propene, 3-[2-(2-methoxyethoxy...	160	C8H16O3	013752-97-1	38
5	2-Propanol, 1-[2-(2-methoxy-1-me...	206	C10H22O4	020324-33-8	38





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Quant Title : 8270C Calibration

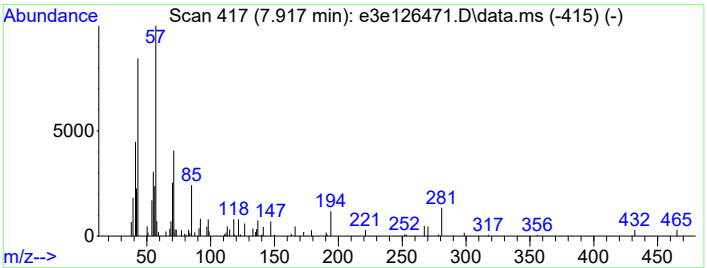
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

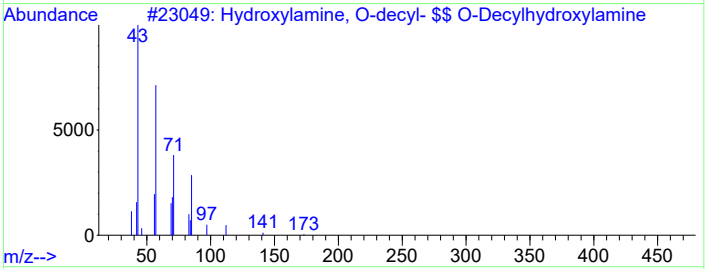
****

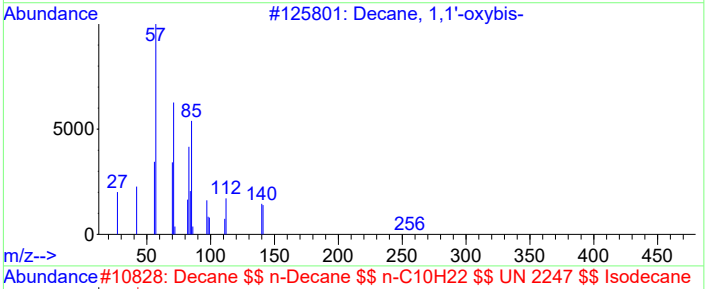
Peak Number 22 Decane, 1,1'-oxybis- Concentration Rank 57

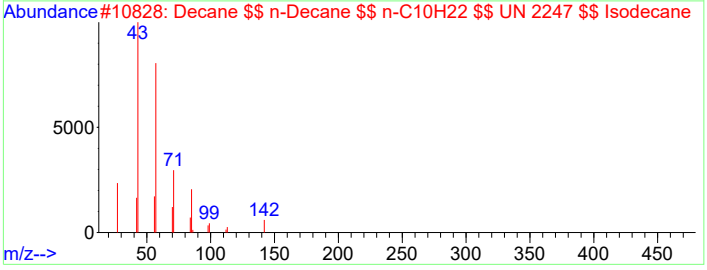
R.T.	EstConc	Area	Relative to ISTD	R.T.
7.917	0.00	39842	External Standard	0.000

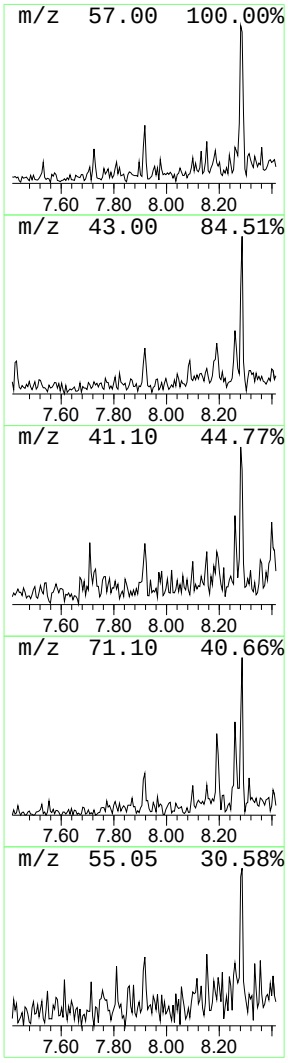
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hydroxylamine, O-decyl- $$ O-Dec...	173	C10H23NO	029812-79-1	59
2	Decane, 1,1'-oxybis-	298	C20H42O	002456-28-2	59
3	Decane $$ n-Decane $$ n-C10H22 $...	142	C10H22	000124-18-5	53
4	Nonane $$ n-Nonane $$ Shellsol 1...	128	C9H20	000111-84-2	47
5	Decane	142	C10H22	000124-18-5	45











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Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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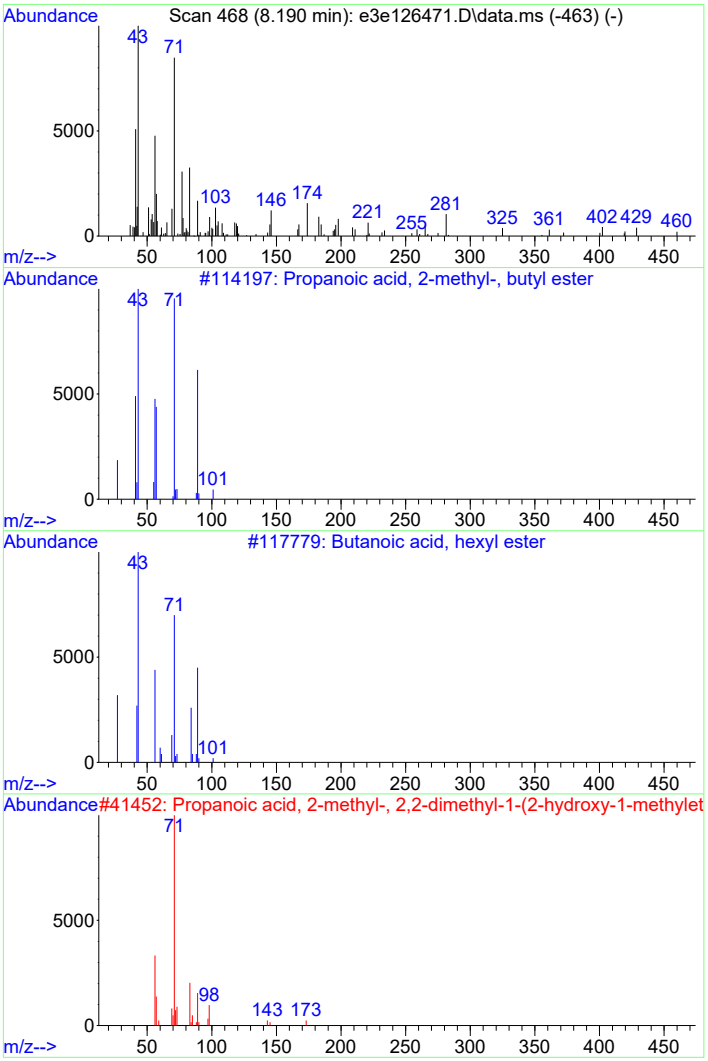
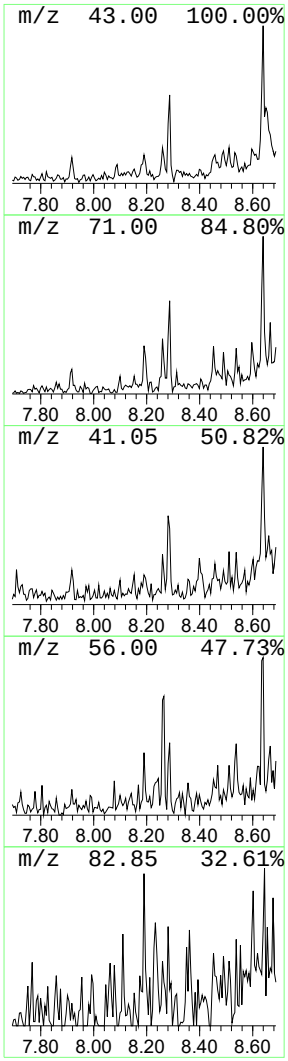
Peak Number 28 Butanoic acid, hexyl ester Concentration Rank 54

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.190	0.00	48321	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Propanoic acid, 2-methyl-, butyl...	144	C8H16O2	000097-87-0	59
2	Butanoic acid, hexyl ester	172	C10H20O2	002639-63-6	59
3	Propanoic acid, 2-methyl-, 2,2-d...	216	C12H24O3	074367-33-2	45
4	Propanoic acid, 2-methyl-, butyl...	144	C8H16O2	000097-87-0	45
5	Butanoic acid, heptyl ester $$ B...	186	C11H22O2	005870-93-9	45





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Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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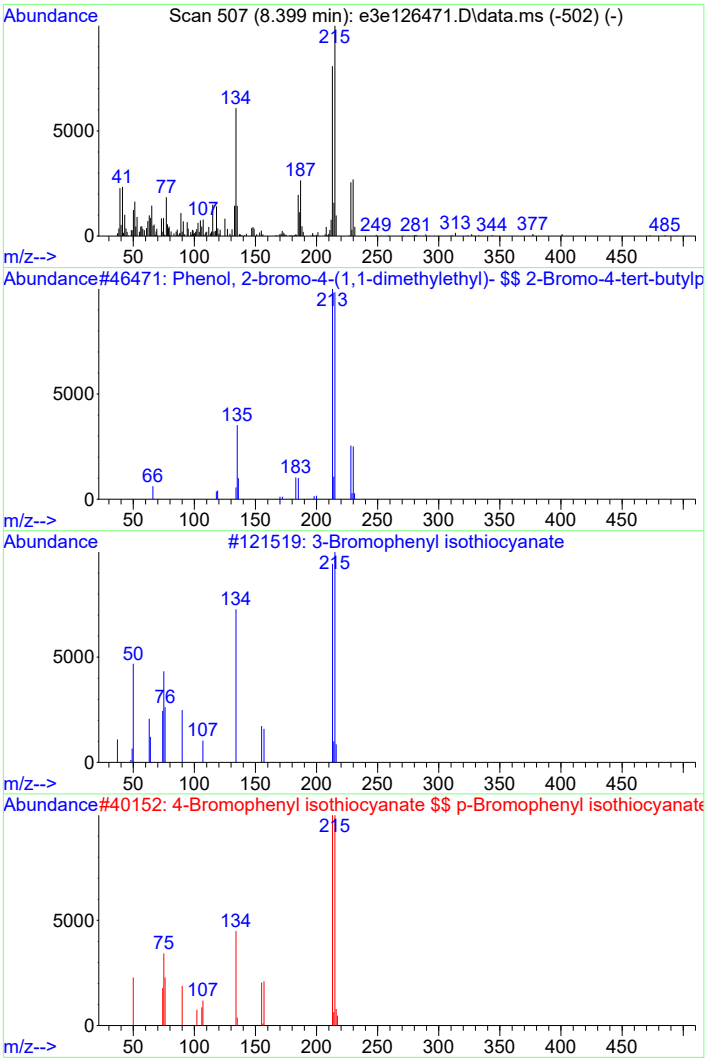
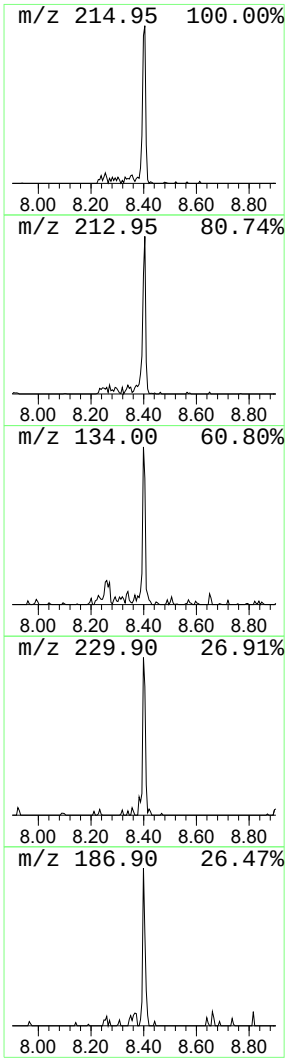
Peak Number 31 Phenol, 2-bromo-4-(1,1-dime... Concentration Rank 27

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.399	0.00	247674	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Phenol, 2-bromo-4-(1,1-dimethyle...	228	C10H13BrO	002198-66-5	58
2	3-Bromophenyl isothiocyanate	213	C7H4BrNS	002131-59-1	58
3	4-Bromophenyl isothiocyanate $$ ...	213	C7H4BrNS	001985-12-2	37
4	6-Amino-8-bromopurine $$ 8-Bromo...	213	C5H4BrN5	006974-78-3	35
5	Propyphenazone	230	C14H18N2O	000479-92-5	30





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Library Search Compound Report

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Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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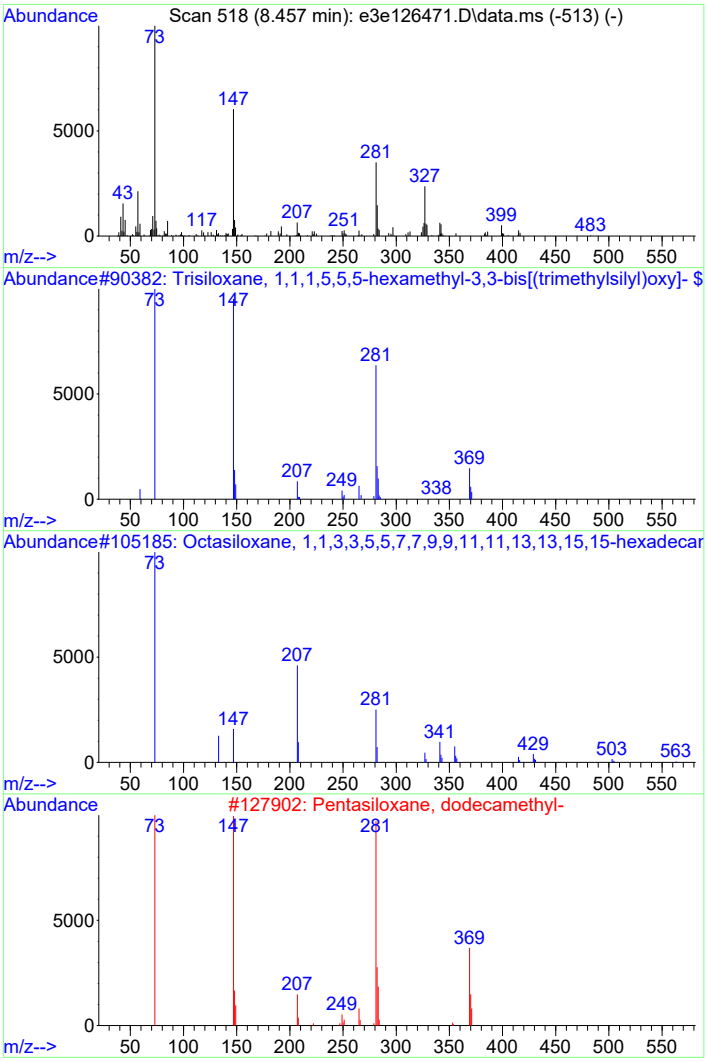
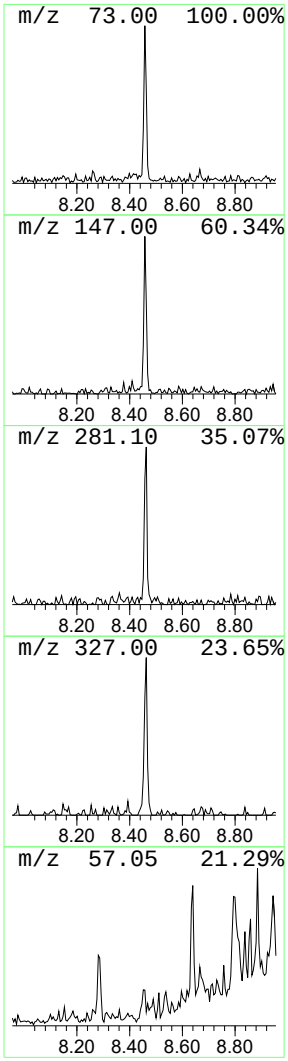
Peak Number 32 Siloxane Concentration Rank 24

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.457	0.00	280703	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	40
2	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	37
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	32
4	1-Propanone, 1,3-diphenyl-3-(tri...	282	C18H22OSi	030262-98-7	14
5	4-Amino-5-imidazole carboxamide,...	342	C13H30N4OSi3	000000-00-0	10





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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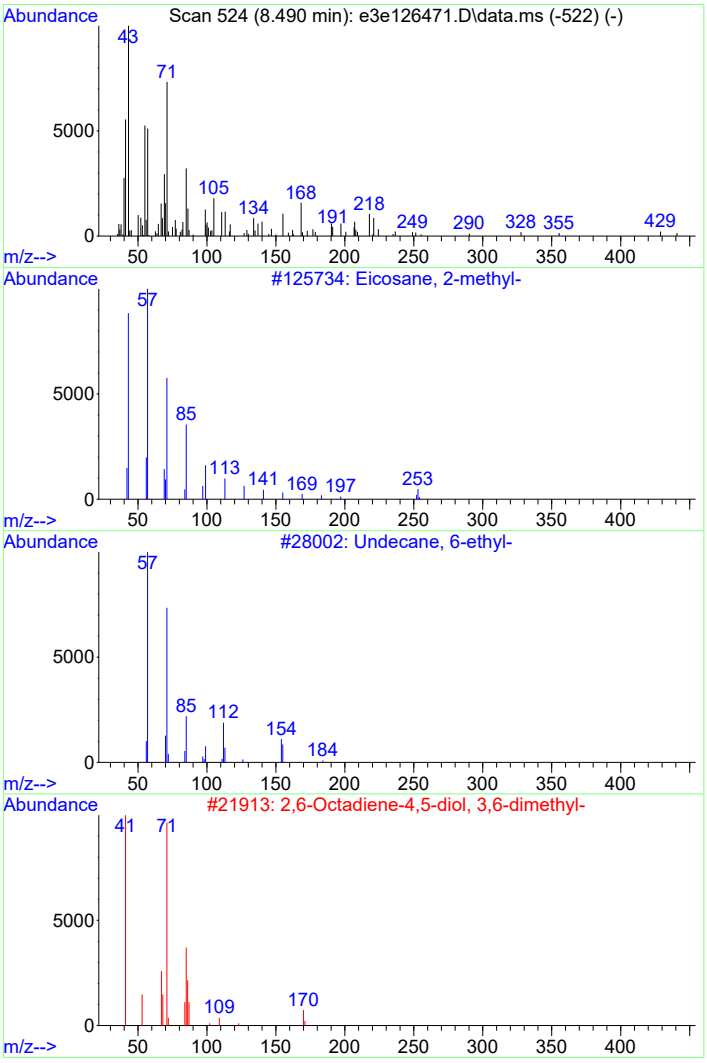
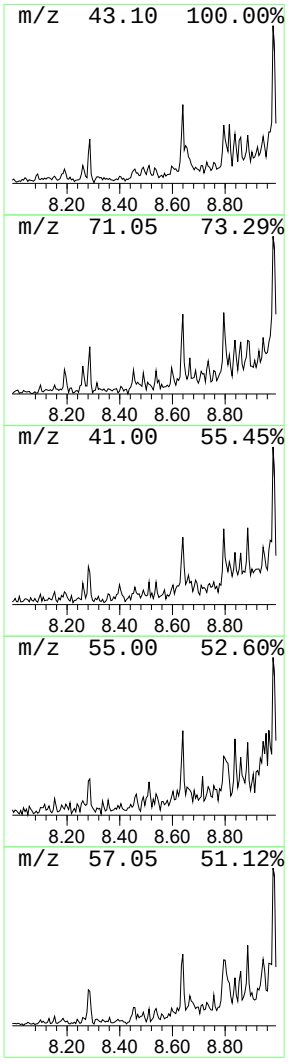
Peak Number 33 Eicosane, 2-methyl- Concentration Rank 63

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.490	0.00	26342	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane, 2-methyl-	296	C21H44	001560-84-5	50
2	Undecane, 6-ethyl-	184	C13H28	017312-60-6	50
3	2,6-Octadiene-4,5-diol, 3,6-dime...	170	C10H18O2	010317-05-2	47
4	Tetrapentacontane	759	C54H110	005856-66-6	43
5	2,4-Hexanedione, 3,5-dimethyl-1-...	218	C14H18O2	000000-00-0	43





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ALS Vial : 5 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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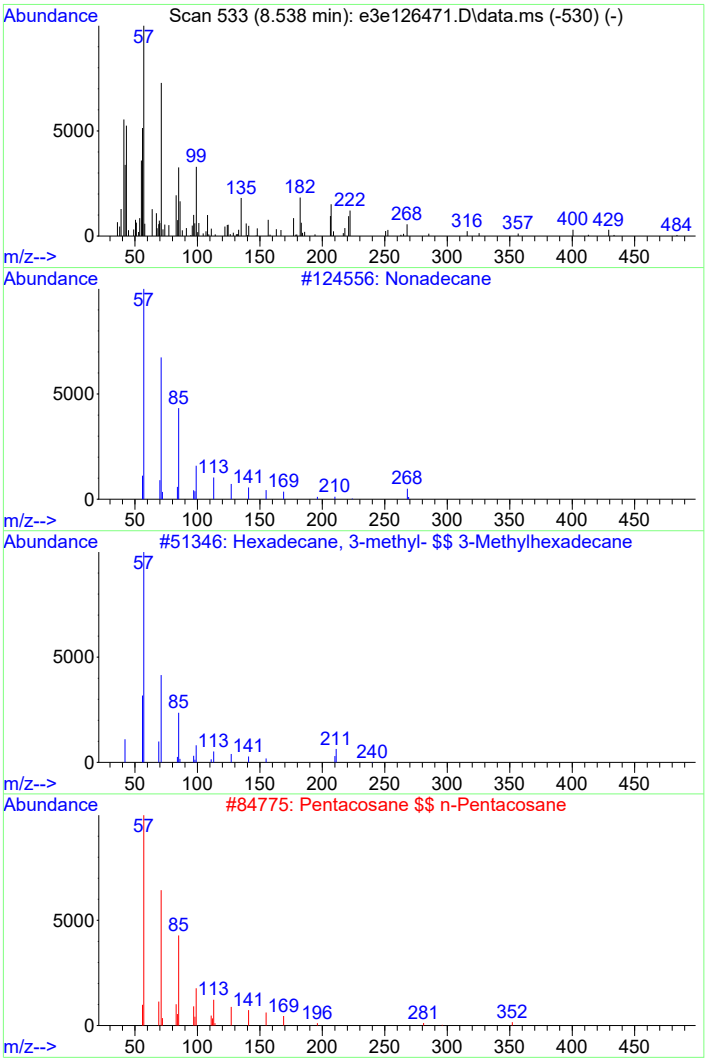
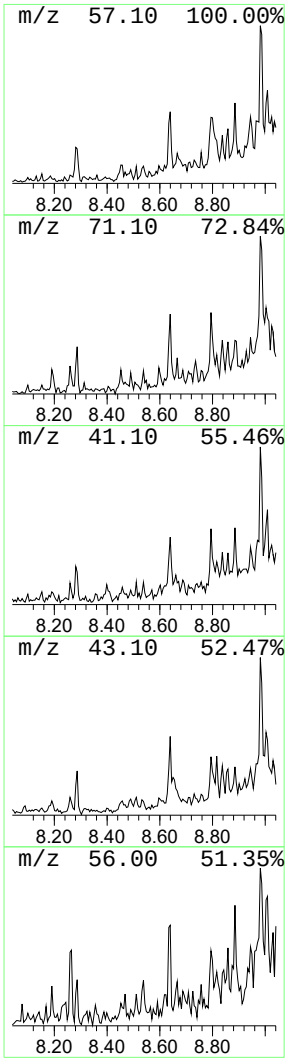
Peak Number 35 Alkane Concentration Rank 49

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.538	0.00	60348	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonadecane	268	C19H40	000629-92-5	38
2	Hexadecane, 3-methyl- $$ 3-Methy...	240	C17H36	006418-43-5	38
3	Pentacosane $$ n-Pentacosane	352	C25H52	000629-99-2	35
4	Tetradecane	198	C14H30	000629-59-4	35
5	Heneicosane	296	C21H44	000629-94-7	27





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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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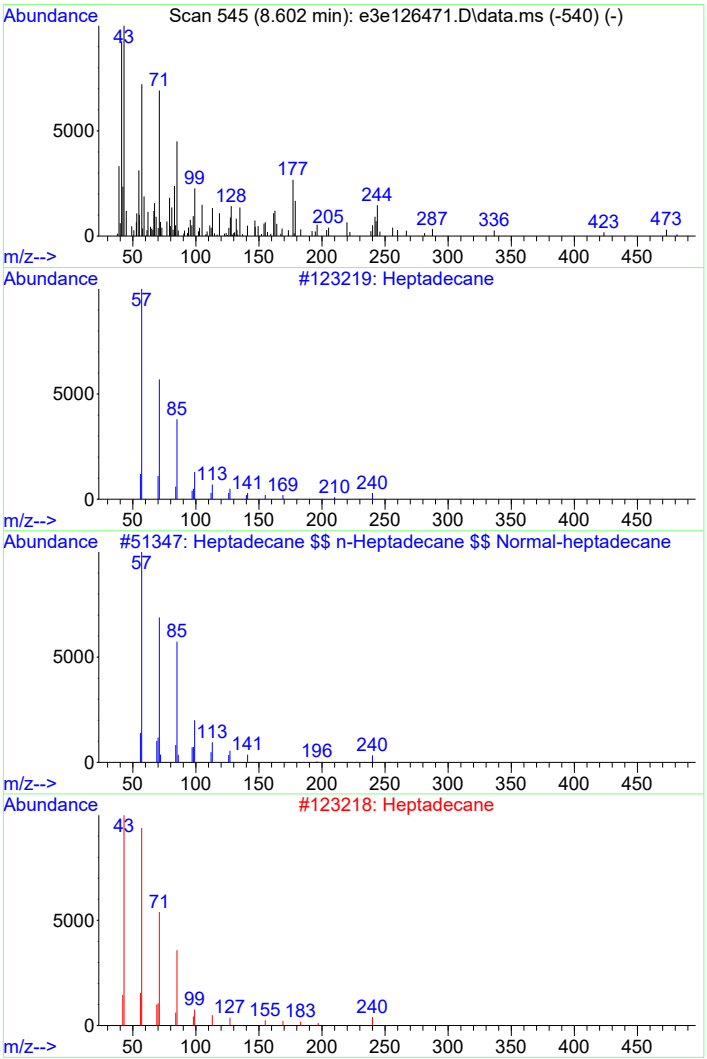
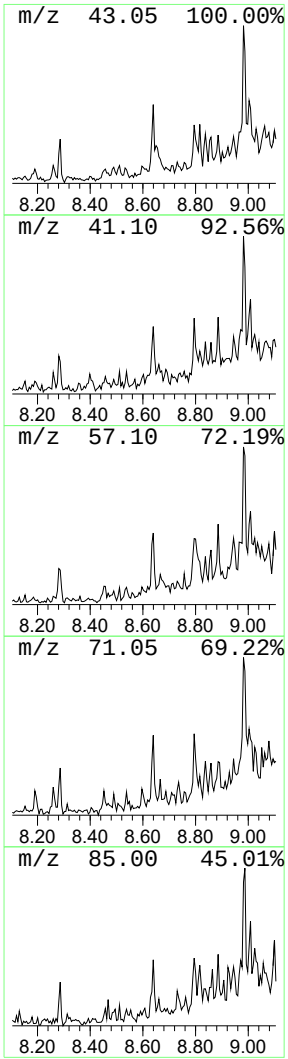
Peak Number 36 Alkane Concentration Rank 46

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.602	0.00	78318	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptadecane	240	C17H36	000629-78-7	55
2	Heptadecane $$ n-Heptadecane $$ ...	240	C17H36	000629-78-7	45
3	Heptadecane	240	C17H36	000629-78-7	43
4	Heptadecane	240	C17H36	000629-78-7	43
5	Eicosane	282	C20H42	000112-95-8	38





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ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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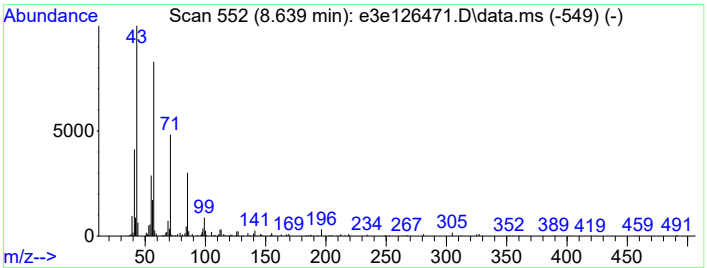
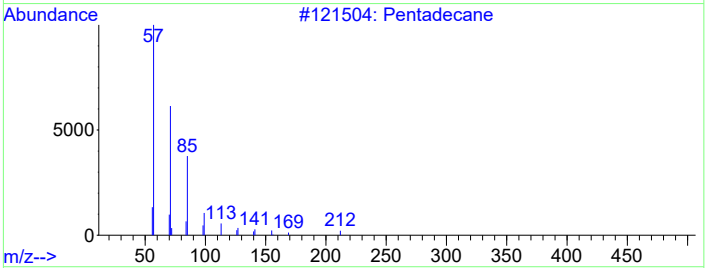
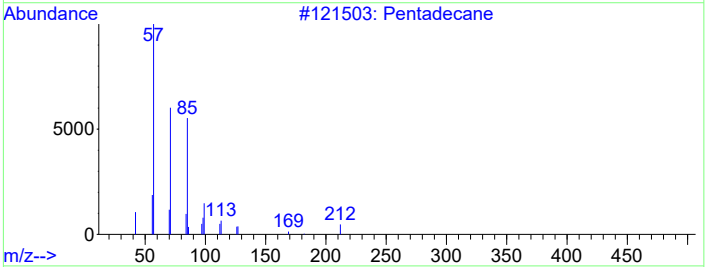
Peak Number 37 Alkane Concentration Rank 16

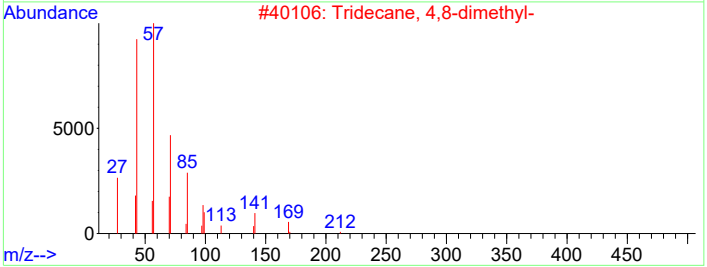
R.T.	EstConc	Area	Relative to ISTD	R.T.
8.639	0.00	376199	External Standard	0.000

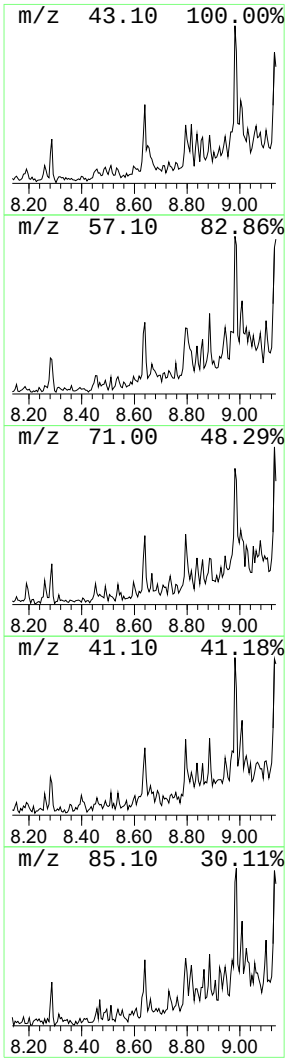
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentadecane	212	C15H32	000629-62-9	93
2	Pentadecane	212	C15H32	000629-62-9	90
3	Tridecane, 4,8-dimethyl-	212	C15H32	055030-62-1	83
4	Pentacosane	352	C25H52	000629-99-2	83
5	Pentadecane $$ n-Pentadecane $$ ...	212	C15H32	000629-62-9	81











Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

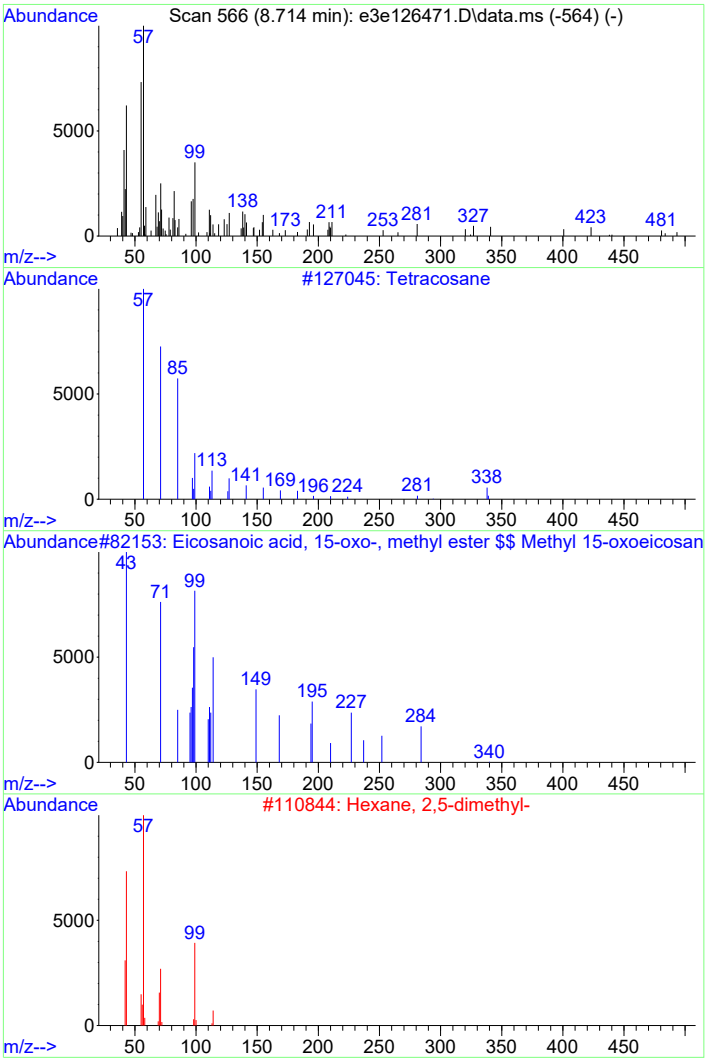
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

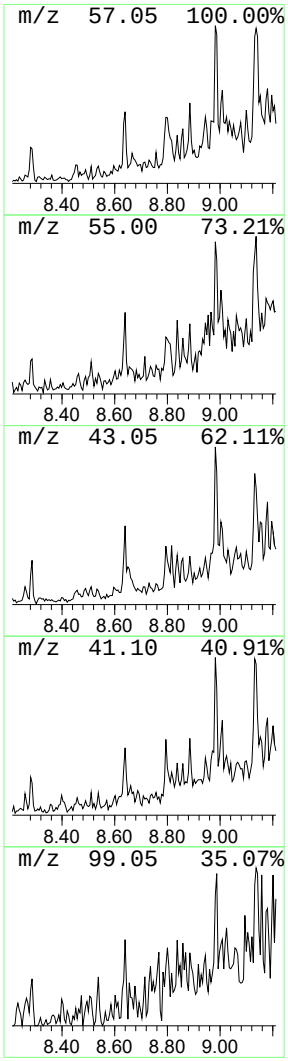
****

Peak Number 38 Alkane Concentration Rank 66

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.714	0.00	23069	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetracosane	338	C24H50	000646-31-1	25
2	Eicosanoic acid, 15-oxo-, methyl...	340	C21H40O3	019271-79-5	25
3	Hexane, 2,5-dimethyl-	114	C8H18	000592-13-2	25
4	Tricosane $$ n-Tricosane	324	C23H48	000638-67-5	23
5	5-Decanone, 2-methyl- $$ 2-Methy...	170	C11H22O	054410-89-8	22





Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

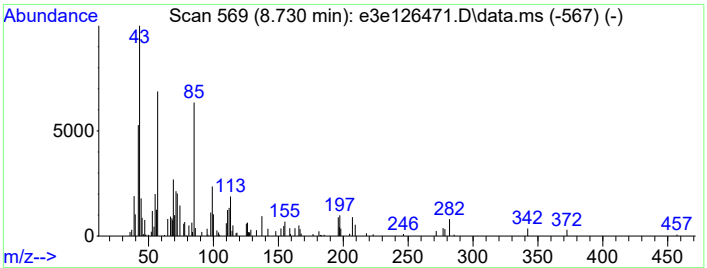
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

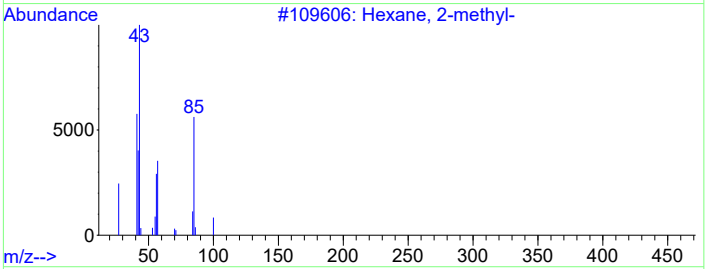
****

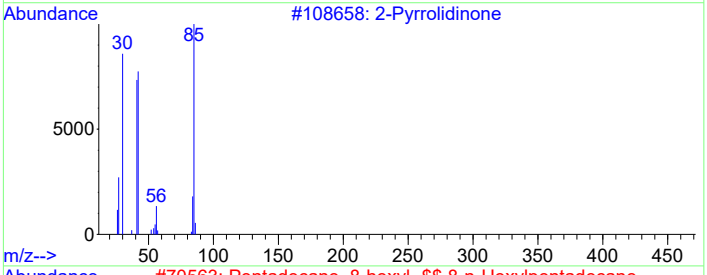
Peak Number 39 Alkane Concentration Rank 55

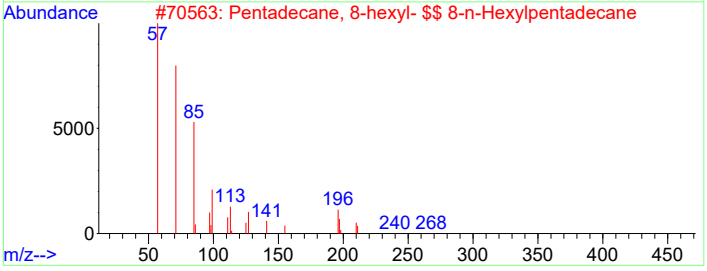
R.T.	EstConc	Area	Relative to ISTD	R.T.
8.730	0.00	44326	External Standard	0.000

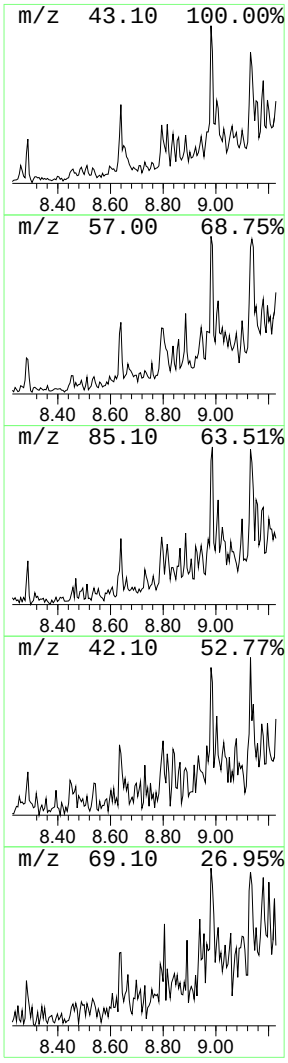
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 2-methyl-	100	C7H16	000591-76-4	38
2	2-Pyrrolidinone	85	C4H7NO	000616-45-5	38
3	Pentadecane, 8-hexyl- $$ 8-n-Hex...	296	C21H44	013475-75-7	35
4	Eicosane	282	C20H42	000112-95-8	30
5	Hexyl octyl ether	214	C14H30O	017071-54-4	27











AECOM_e3g_TPHEXT.M Wed Jan 01 08:14:21 2025 21

Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

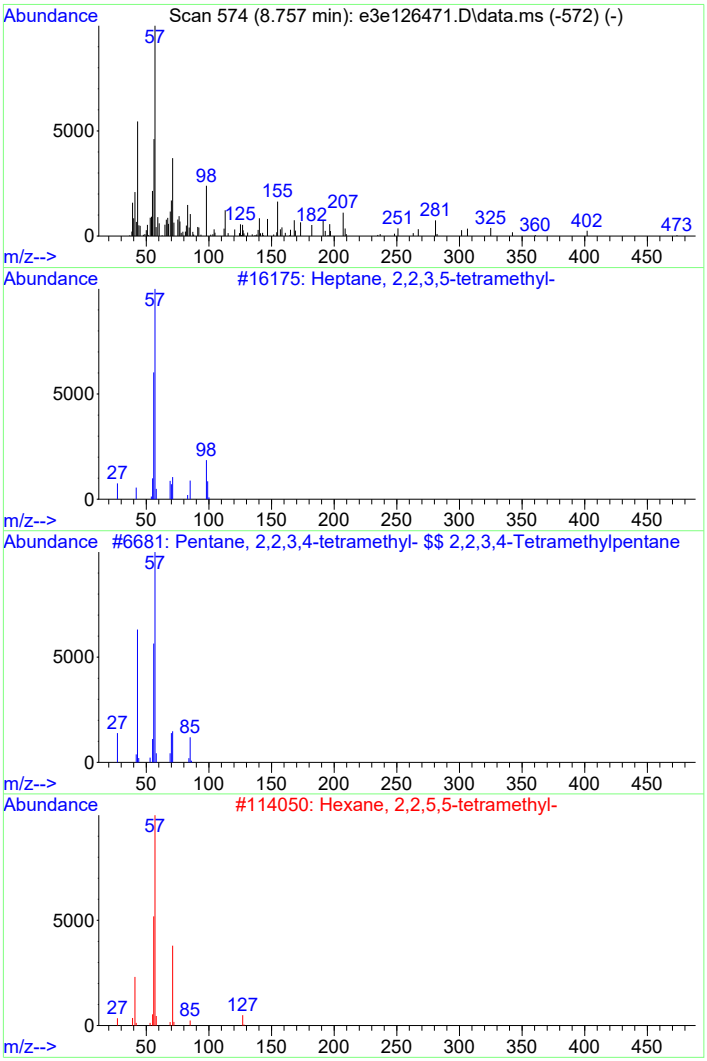
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

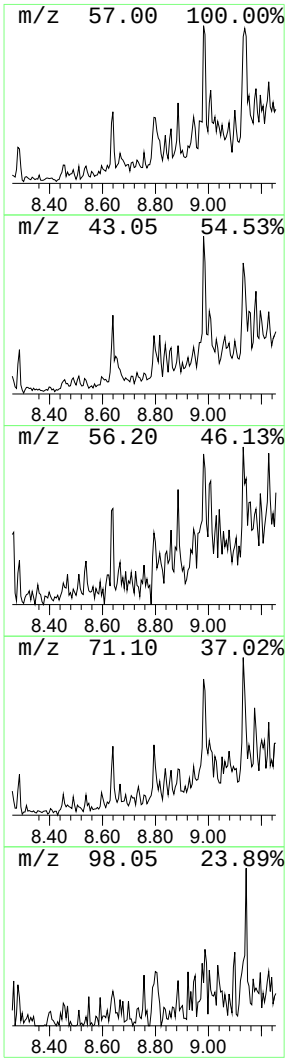
****

Peak Number 40 Alkane Concentration Rank 51

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.757	0.00	53940	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 2,2,3,5-tetramethyl-	156	C11H24	061868-42-6	43
2	Pentane, 2,2,3,4-tetramethyl- $$...	128	C9H20	001186-53-4	22
3	Hexane, 2,2,5,5-tetramethyl-	142	C10H22	001071-81-4	22
4	Azetidine, 1-methyl- $$ N-Methyl...	71	C4H9N	004923-79-9	22
5	Azetidine	57	C3H7N	000503-29-7	22





Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

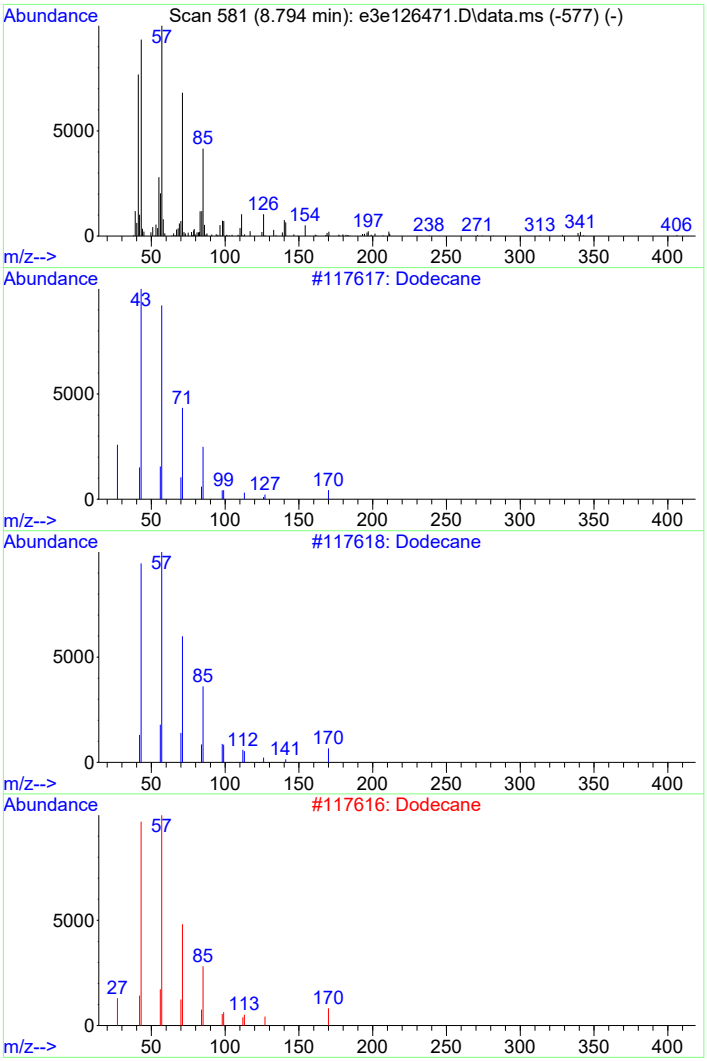
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

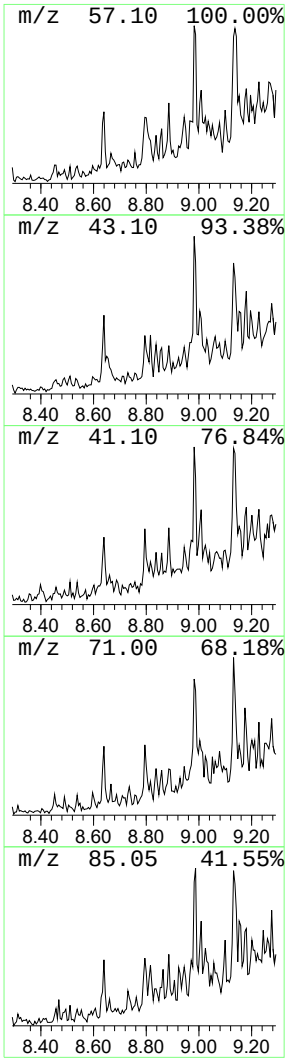
****

Peak Number 41 Alkane Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.794	0.00	378170	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane	170	C12H26	000112-40-3	83
2	Dodecane	170	C12H26	000112-40-3	83
3	Dodecane	170	C12H26	000112-40-3	74
4	Dodecane	170	C12H26	000112-40-3	72
5	Tetracosane, 11-decyl- $$ 11-n-D...	479	C34H70	055429-84-0	72





Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

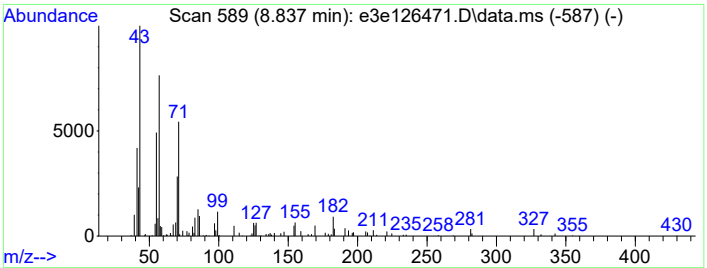
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

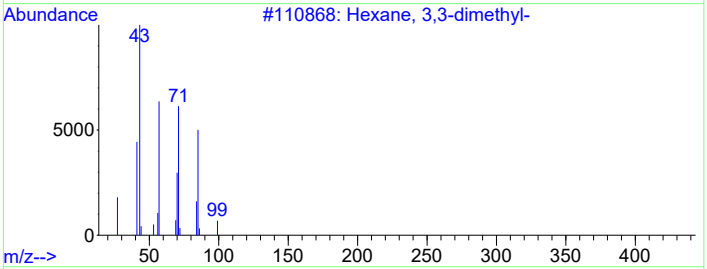
****

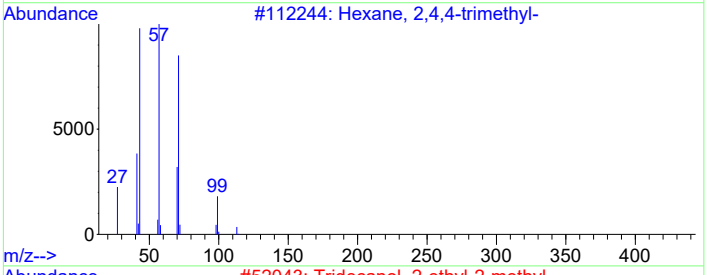
Peak Number 42 Alkane Concentration Rank 42

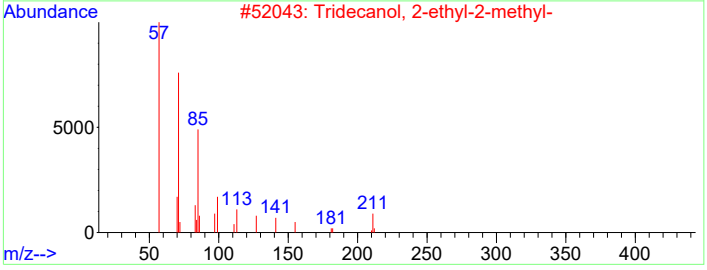
R.T.	EstConc	Area	Relative to ISTD	R.T.
8.837	0.00	83749	External Standard	0.000

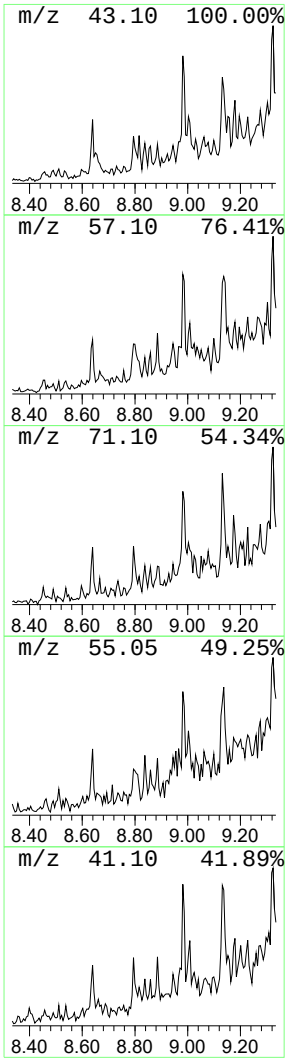
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 3,3-dimethyl-	114	C8H18	000563-16-6	47
2	Hexane, 2,4,4-trimethyl-	128	C9H20	016747-30-1	47
3	Tridecanol, 2-ethyl-2-methyl-	242	C16H34O	000000-00-0	47
4	Decane, 3,3,8-trimethyl-	184	C13H28	062338-16-3	47
5	Hexane, 2,4,4-trimethyl-	128	C9H20	016747-30-1	47











Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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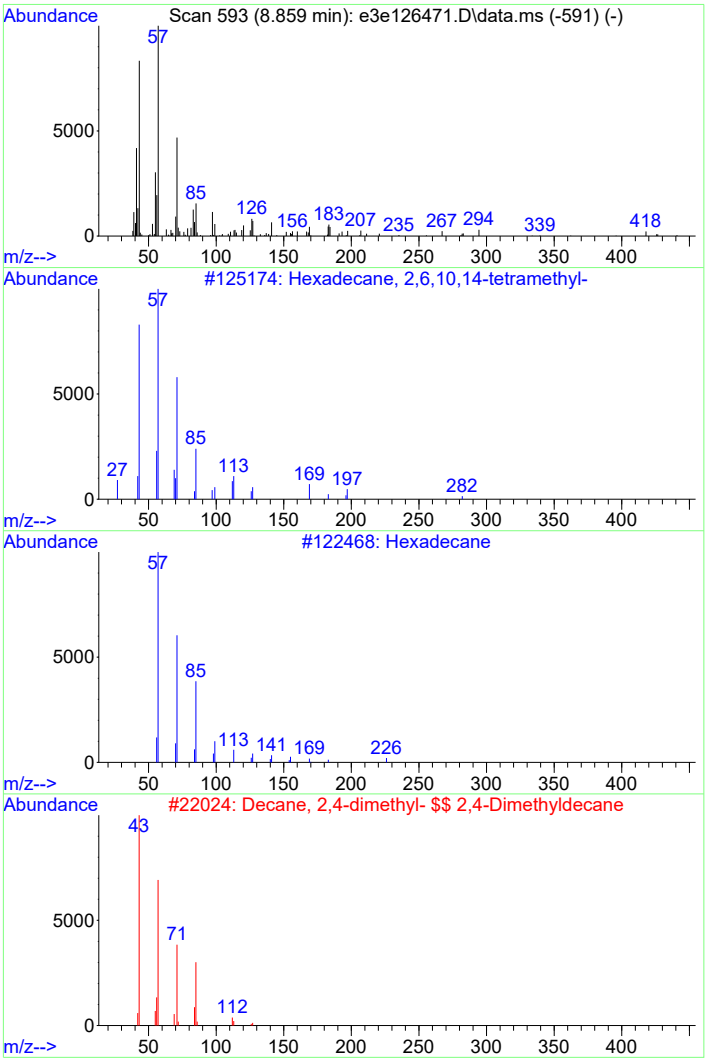
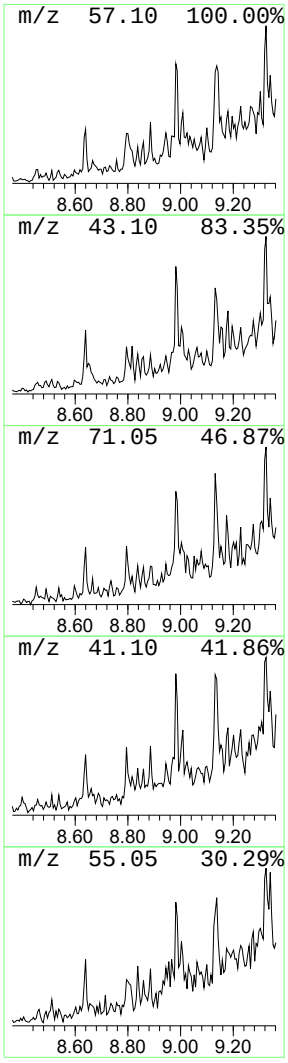
Peak Number 43 Alkane Concentration Rank 45

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.859	0.00	79533	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecane, 2,6,10,14-tetramethyl-	282	C20H42	000638-36-8	68
2	Hexadecane	226	C16H34	000544-76-3	59
3	Decane, 2,4-dimethyl- $$ 2,4-Dim...	170	C12H26	002801-84-5	53
4	7,11-Dimethyloctadecane	282	C20H42	065431-89-2	53
5	Decane, 2-methyl- $$ 2-Methyldec...	156	C11H24	006975-98-0	52





Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

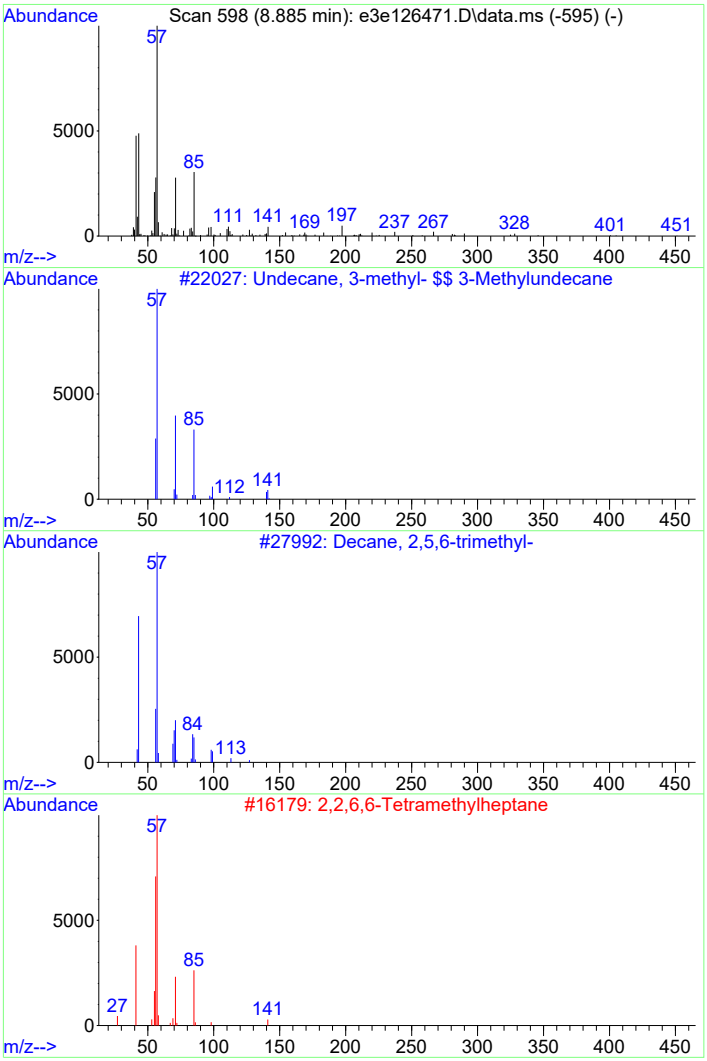
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

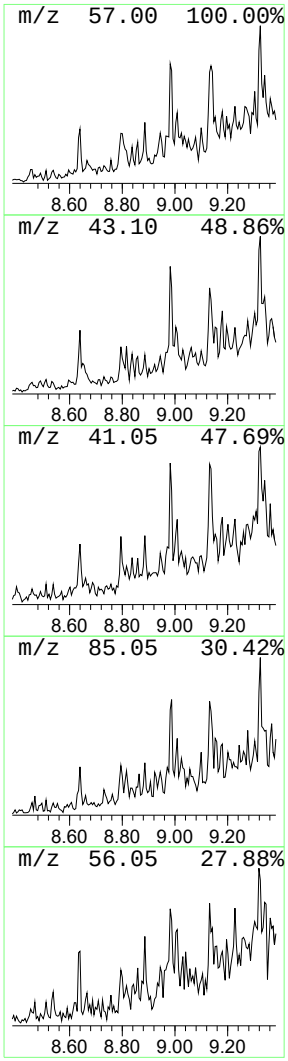
****

Peak Number 44 Alkane Concentration Rank 38

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.885	0.00	117781	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane, 3-methyl- $$ 3-Methylu...	170	C12H26	001002-43-3	56
2	Decane, 2,5,6-trimethyl-	184	C13H28	062108-23-0	53
3	2,2,6,6-Tetramethylheptane	156	C11H24	040117-45-1	47
4	Decane, 3,8-dimethyl-	170	C12H26	017312-55-9	38
5	3-Hexanone, 2,5-dimethyl-	128	C8H16O	001888-57-9	38





Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

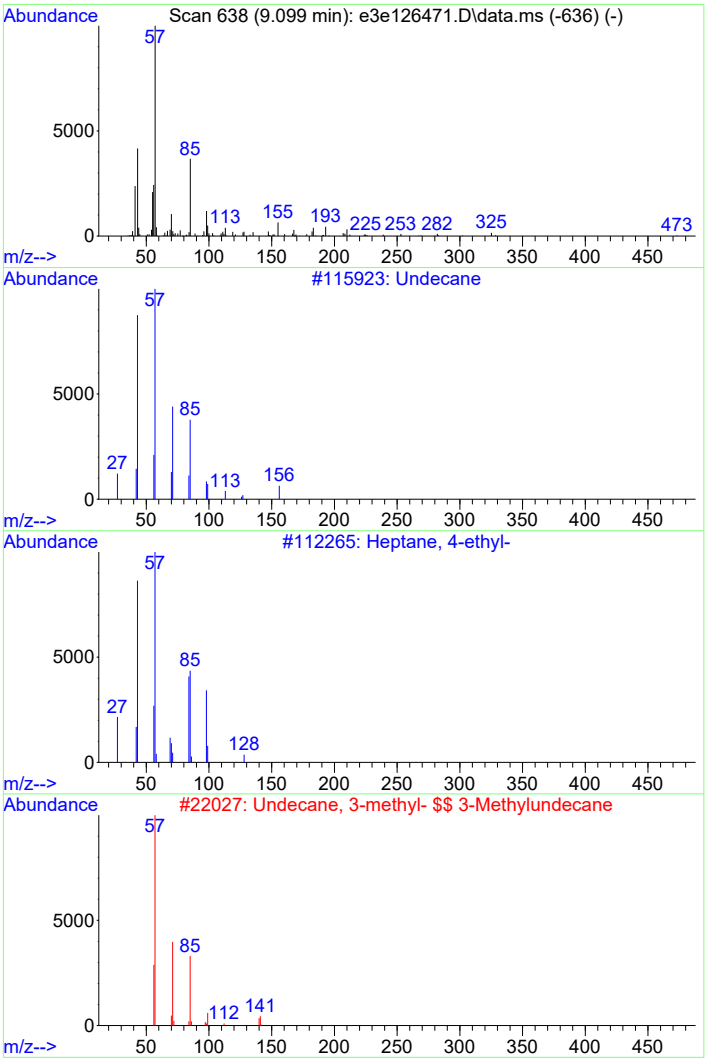
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

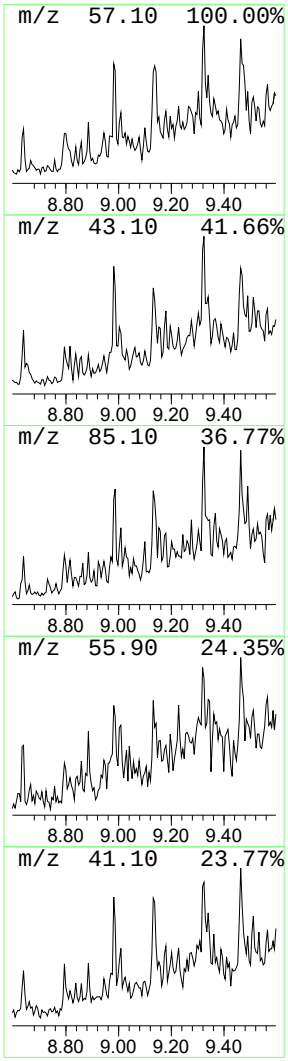
****

Peak Number 45 Alkane Concentration Rank 43

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.099	0.00	82783	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Undecane	156	C11H24	001120-21-4	45
2	Heptane, 4-ethyl-	128	C9H20	002216-32-2	42
3	Undecane, 3-methyl- $$ 3-Methylu...	170	C12H26	001002-43-3	40
4	1-Iodo-2-methylundecane	296	C12H25I	073105-67-6	40
5	Tetradecane, 3-methyl- $$ 3-Meth...	212	C15H32	018435-22-8	40





AECOM_e3g_TPHEXT.M Wed Jan 01 08:14:30 2025 27

Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

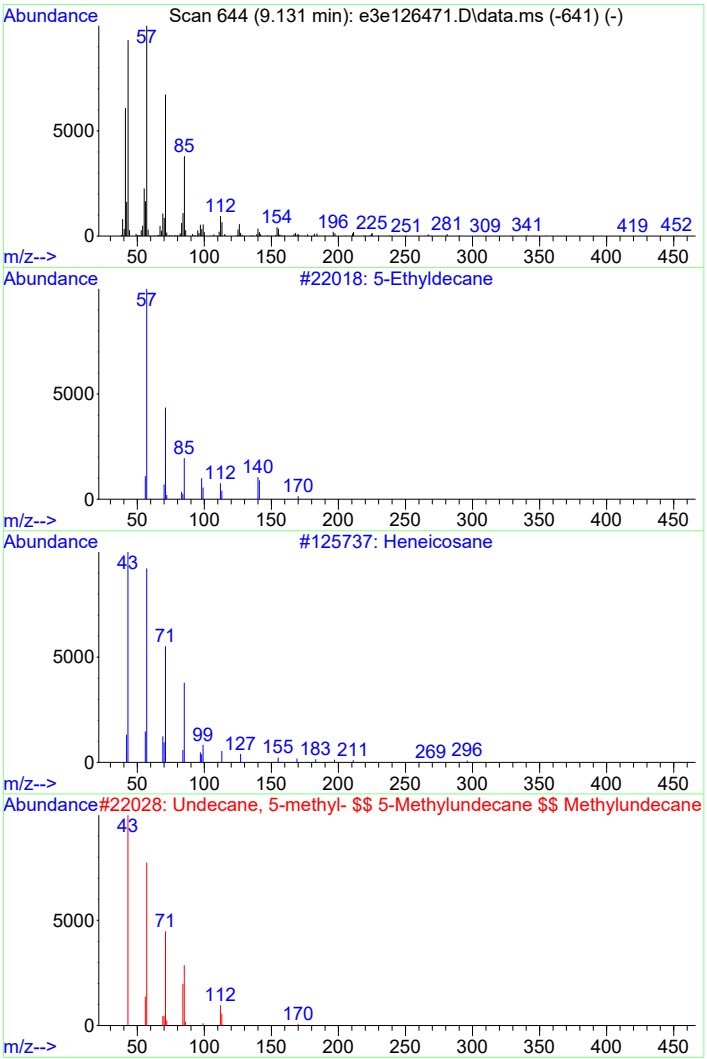
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

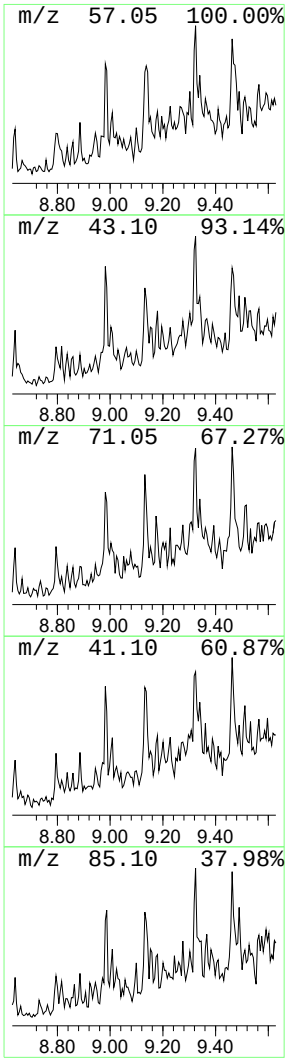
****

Peak Number 46 Alkane Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.131	0.00	728079	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	5-Ethyldecane	170	C12H26	017302-36-2	80
2	Heneicosane	296	C21H44	000629-94-7	74
3	Undecane, 5-methyl- $$ 5-Methylu...	170	C12H26	001632-70-8	72
4	Eicosane	282	C20H42	000112-95-8	64
5	Octane, 5-ethyl-2-methyl-	156	C11H24	062016-18-6	64





AECOM_e3g_TPHEXT.M Wed Jan 01 08:14:31 2025 28

Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

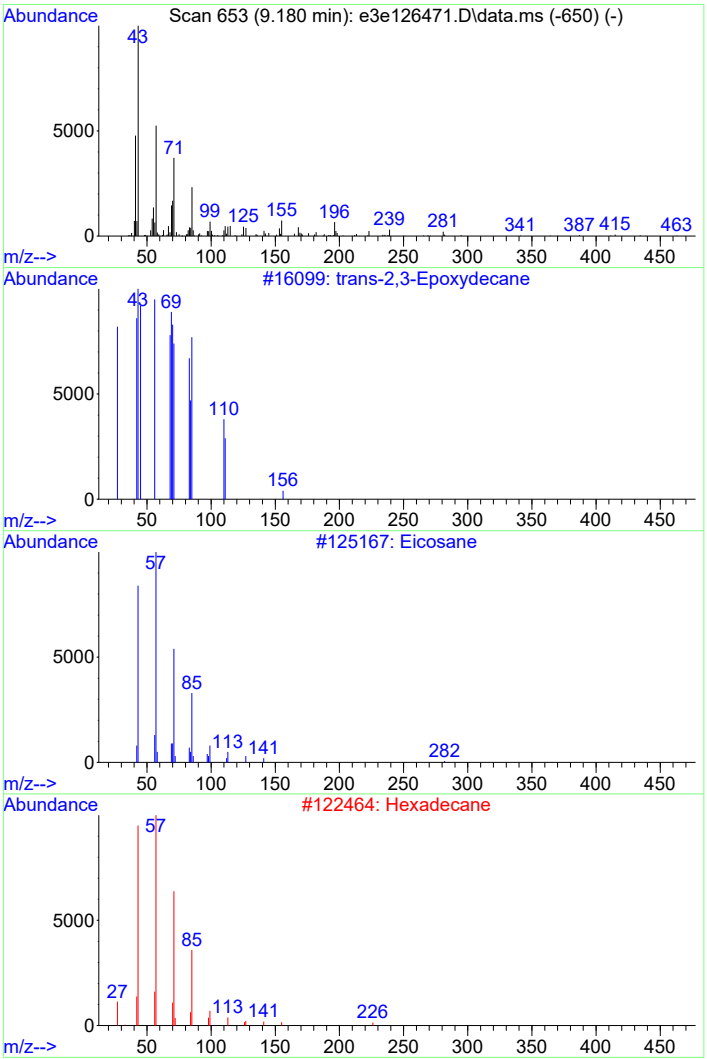
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

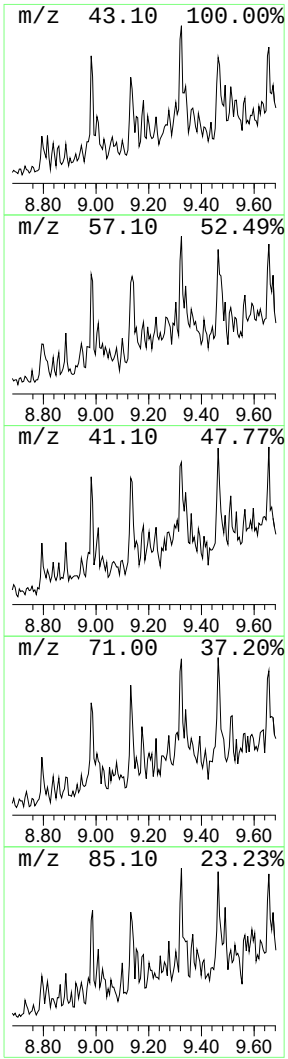
****

Peak Number 47 Alkane Concentration Rank 30

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.180	0.00	192094	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	trans-2,3-Epoxydecane	156	C10H20O	054125-39-2	60
2	Eicosane	282	C20H42	000112-95-8	60
3	Hexadecane	226	C16H34	000544-76-3	50
4	Tetradecane	198	C14H30	000629-59-4	49
5	Heptacosane	380	C27H56	000593-49-7	49





Library Search Compound Report

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Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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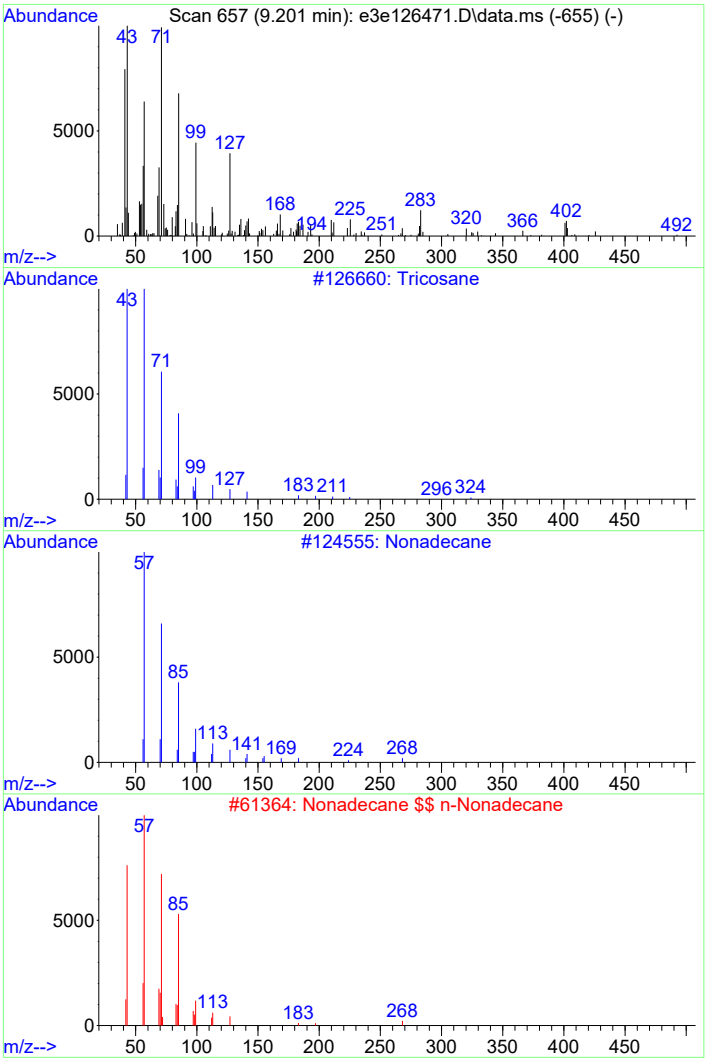
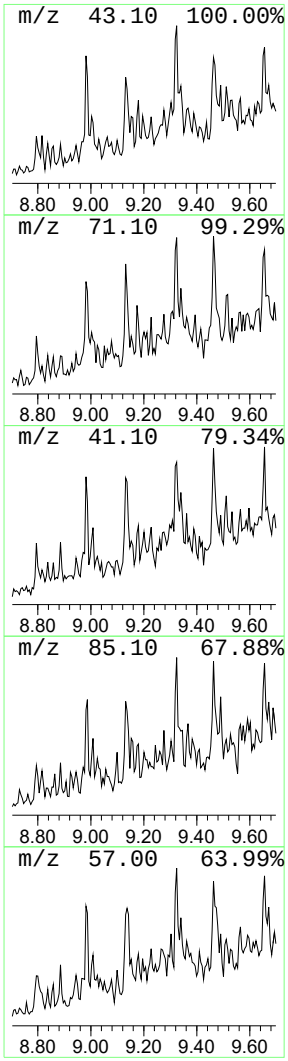
Peak Number 48 Alkane Concentration Rank 32

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.201	0.00	168416	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tricosane	324	C23H48	000638-67-5	49
2	Nonadecane	268	C19H40	000629-92-5	49
3	Nonadecane $$ n-Nonadecane	268	C19H40	000629-92-5	49
4	Nonadecane	268	C19H40	000629-92-5	49
5	Triacontane	422	C30H62	000638-68-6	47





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ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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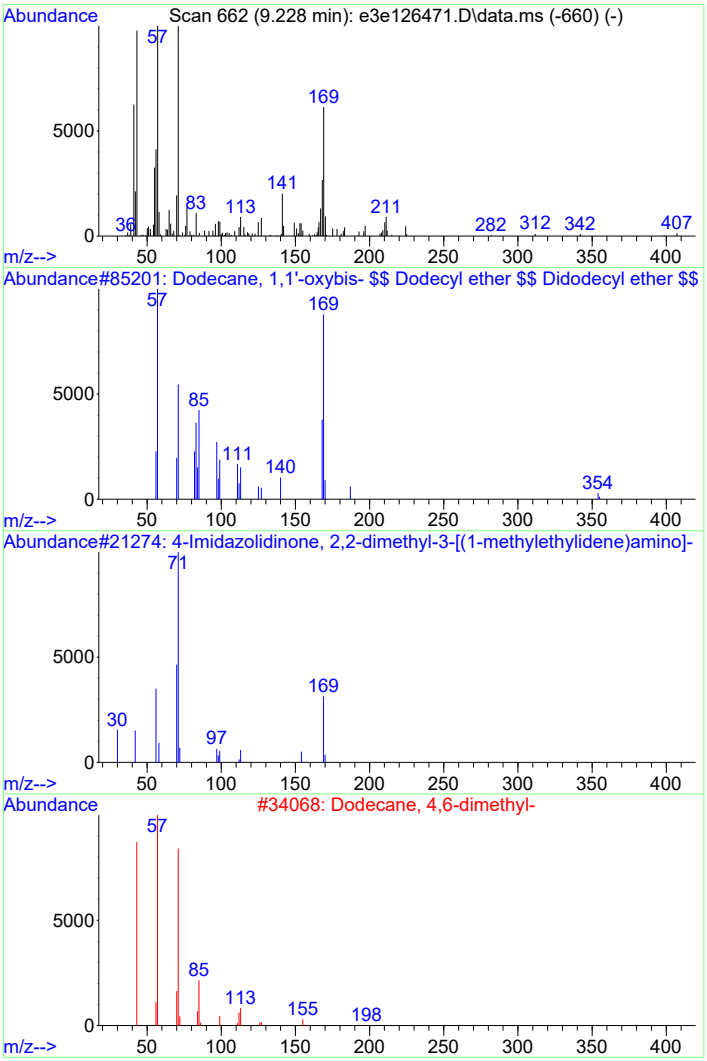
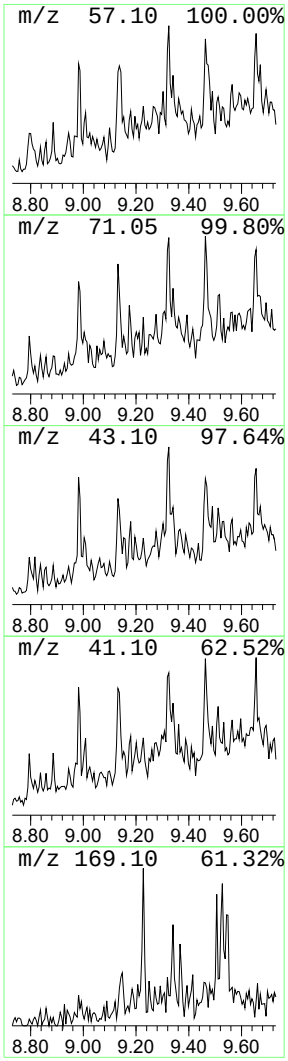
Peak Number 49 Alkane Concentration Rank 37

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.228	0.00	119031	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane, 1,1'-oxybis- $$ Dodecy...	354	C24H50O	004542-57-8	43
2	4-Imidazolidinone, 2,2-dimethyl-...	169	C8H15N3O	142071-78-1	25
3	Dodecane, 4,6-dimethyl-	198	C14H30	061141-72-8	22
4	3-Hydroxy-2-methylglutaric acid ...	190	C8H14O5	056652-39-2	22
5	Octane, 2-bromo-	192	C8H17Br	000557-35-7	22





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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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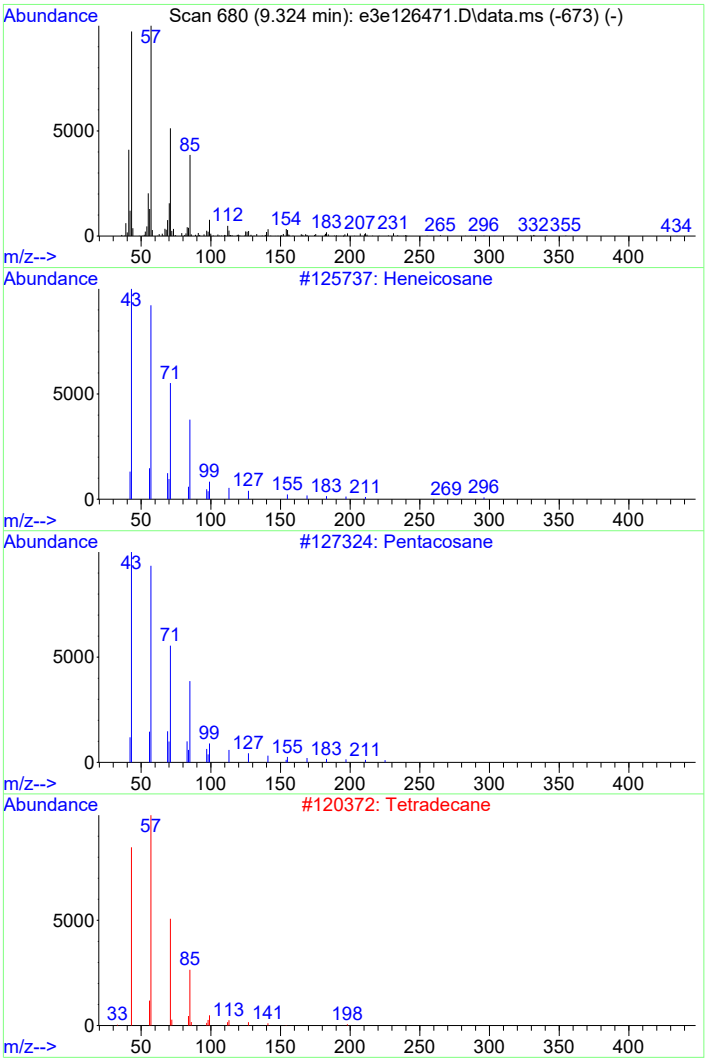
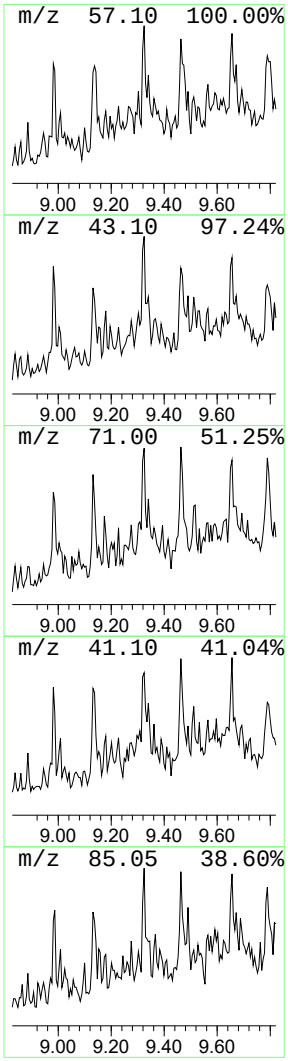
Peak Number 50 Alkane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.324	0.00	688147	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heneicosane	296	C21H44	000629-94-7	87
2	Pentacosane	352	C25H52	000629-99-2	86
3	Tetradecane	198	C14H30	000629-59-4	83
4	Bacchotricuneatin c	342	C20H22O5	066563-30-2	72
5	Pentadecane	212	C15H32	000629-62-9	64





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Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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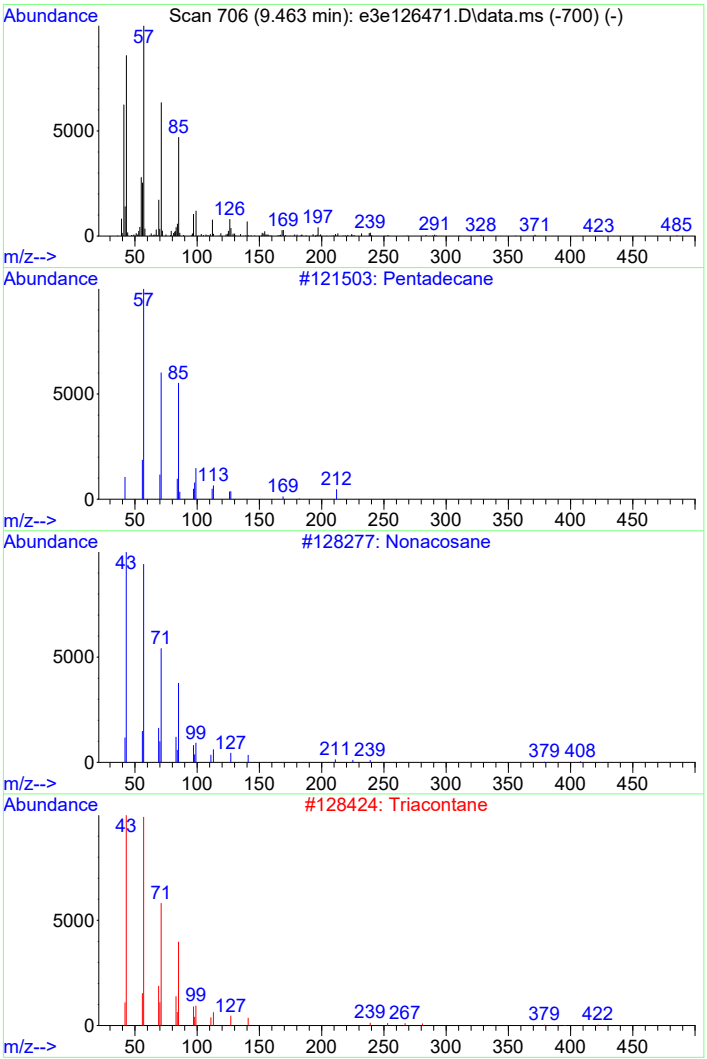
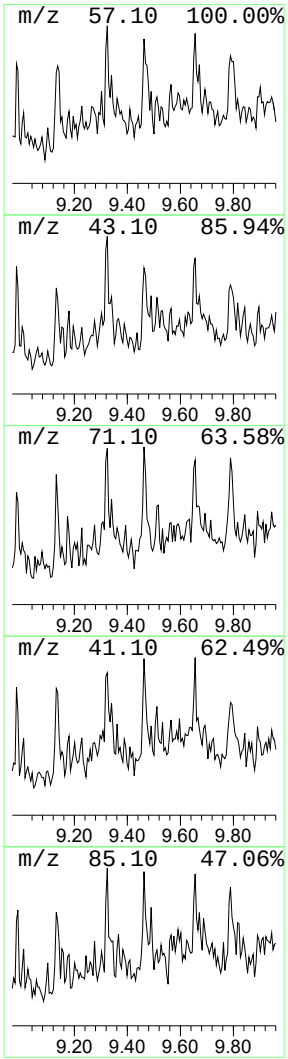
Peak Number 52 Alkane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.463	0.00	870587	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentadecane	212	C15H32	000629-62-9	80
2	Nonacosane	408	C29H60	000630-03-5	80
3	Triacontane	422	C30H62	000638-68-6	72
4	Octacosane	394	C28H58	000630-02-4	72
5	10-Methylnonadecane	282	C20H42	056862-62-5	72





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Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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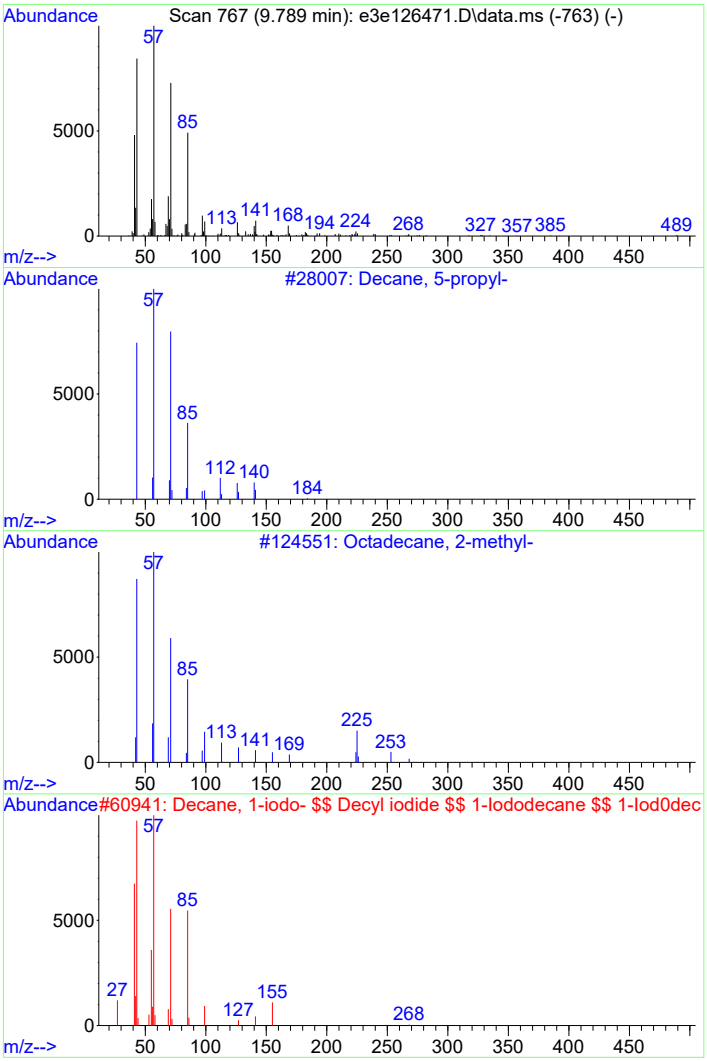
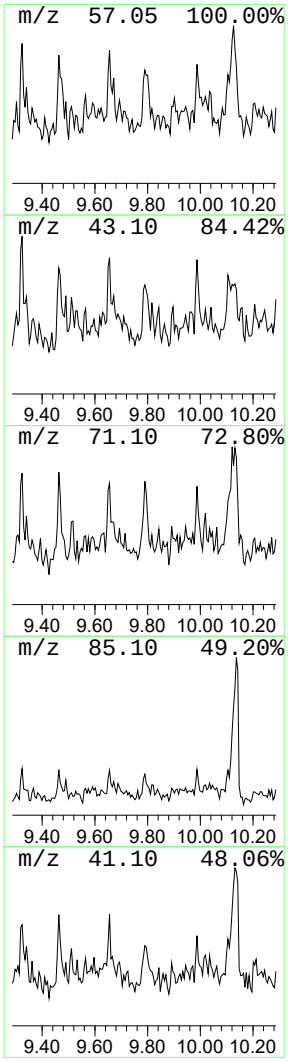
Peak Number 54 Alkane Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.789	0.00	609228	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane, 5-propyl-	184	C13H28	017312-62-8	83
2	Octadecane, 2-methyl-	268	C19H40	001560-88-9	72
3	Decane, 1-iodo- $$ Decyl iodide ...	268	C10H21I	002050-77-3	64
4	Eicosane, 2-methyl-	296	C21H44	001560-84-5	53
5	Heptadecane	240	C17H36	000629-78-7	52





Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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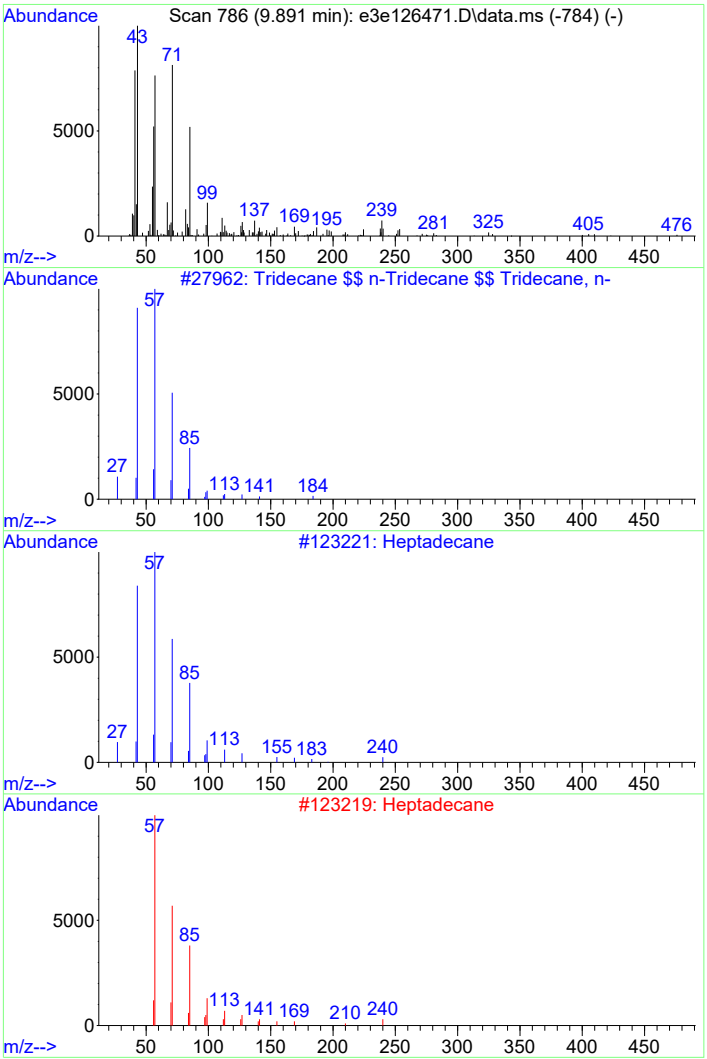
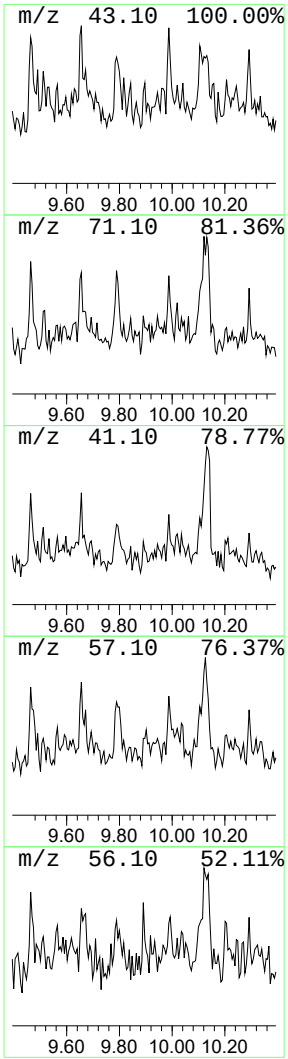
Peak Number 55 Alkane Concentration Rank 25

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.891	0.00	248682	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tridecane $$ n-Tridecane $$ Trid...	184	C13H28	000629-50-5	58
2	Heptadecane	240	C17H36	000629-78-7	58
3	Heptadecane	240	C17H36	000629-78-7	58
4	Octane, 2,6-dimethyl-	142	C10H22	002051-30-1	49
5	Dodecane, 2-methyl-	184	C13H28	001560-97-0	41





Library Search Compound Report

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Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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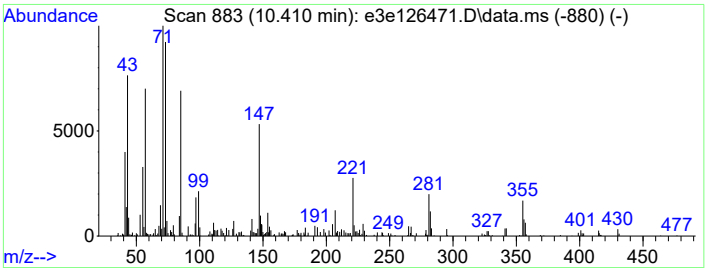
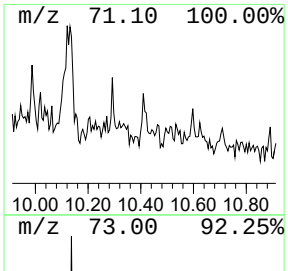
Peak Number 56 Alkane Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.410	0.00	412872	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane, 9-octyl- $$ 9-n-Octyle...	394	C28H58	013475-77-9	49
2	Pentadecane	212	C15H32	000629-62-9	45
3	Hexadecane	226	C16H34	000544-76-3	45
4	Eicosane $$ n-Eicosane	282	C20H42	000112-95-8	43
5	Pentadecane $$ n-Pentadecane $$ ...	212	C15H32	000629-62-9	43





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Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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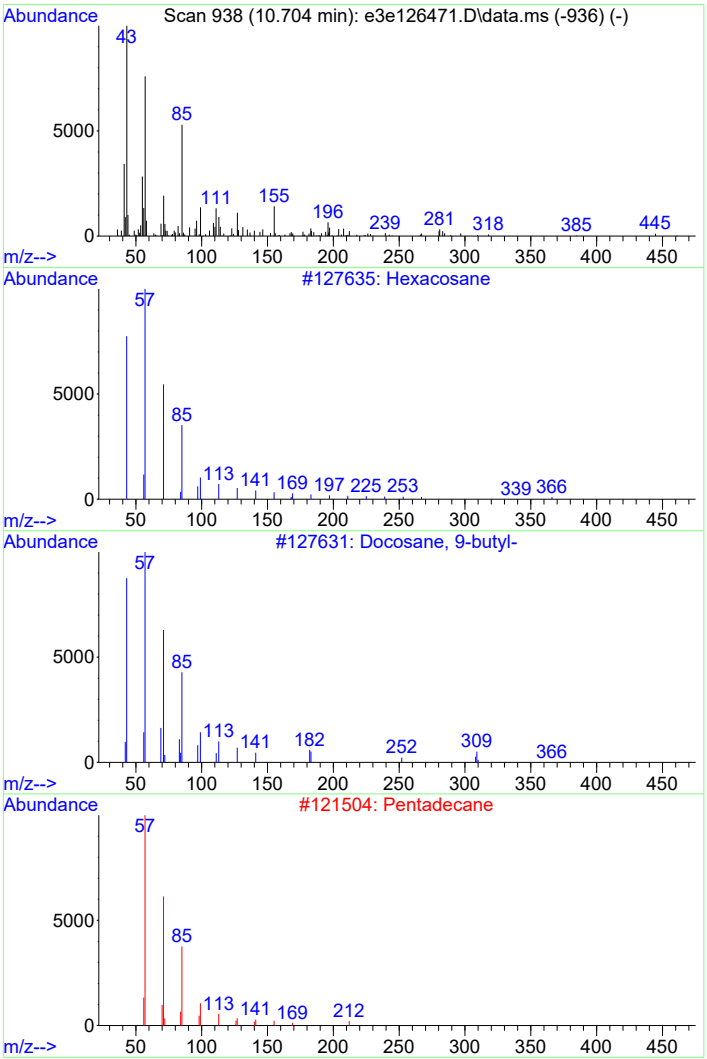
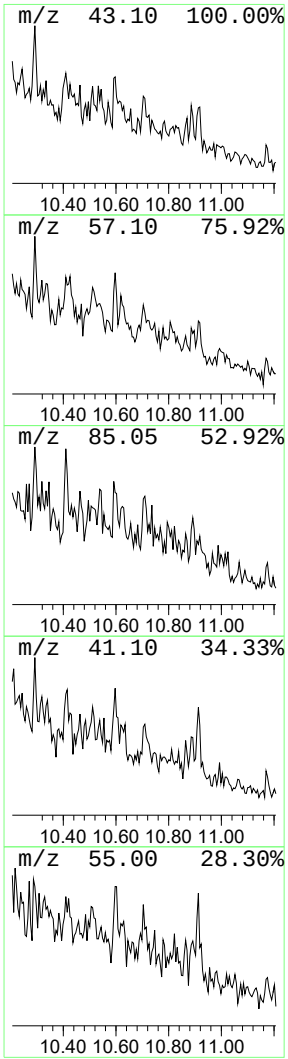
Peak Number 57 Alkane Concentration Rank 34

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.704	0.00	136077	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexacosane	366	C26H54	000630-01-3	53
2	Docosane, 9-butyl-	366	C26H54	055282-14-9	53
3	Pentadecane	212	C15H32	000629-62-9	49
4	Pentadecane $$ n-Pentadecane $$ ...	212	C15H32	000629-62-9	49
5	Fructopyranose, 1,2:4,5-di-O-iso...	260	C12H20O6	020880-93-7	43





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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

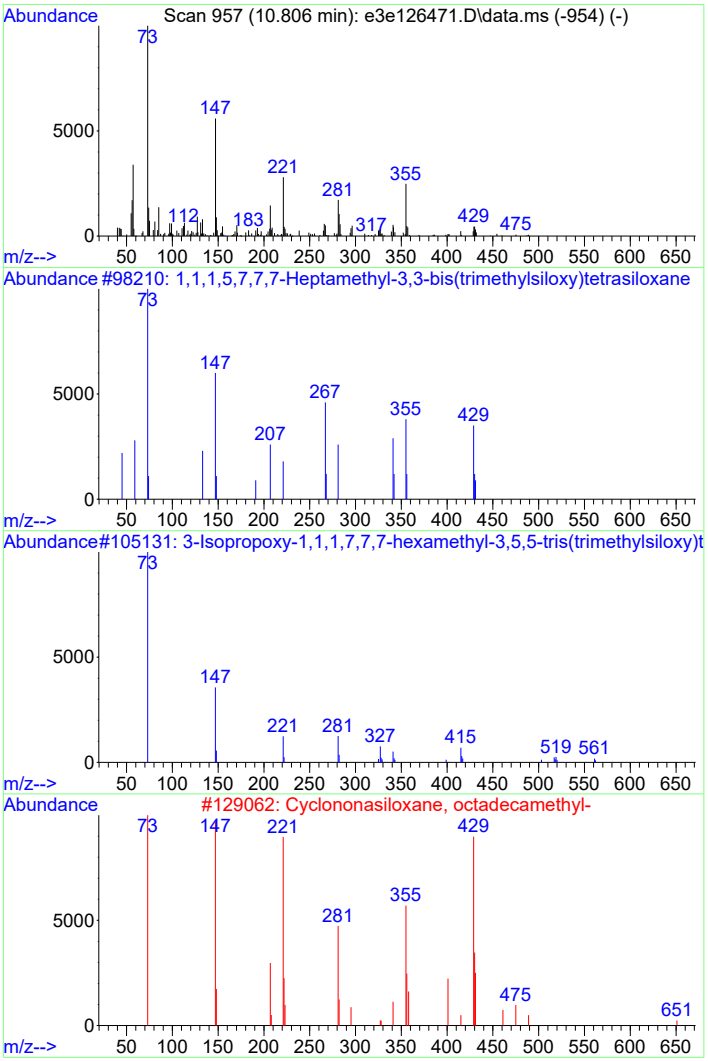
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

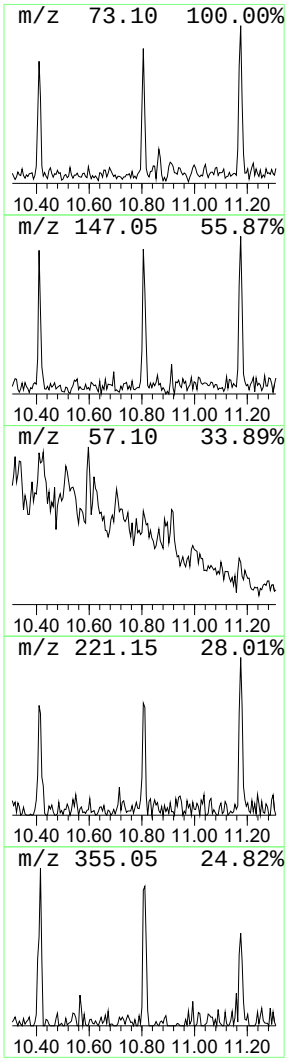
****

Peak Number 58 Siloxane Concentration Rank 21

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.806	0.00	298900	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	38
2	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	36
3	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	36
4	Benzoic acid, 2,4,6-trimethyl-, ...	236	C13H20O2Si	070079-88-8	17
5	1,1,1,3,5,7,9,11,11,11-Decamethy...	490	C13H42O6Si7	050694-26-3	16





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Library Search Compound Report

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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

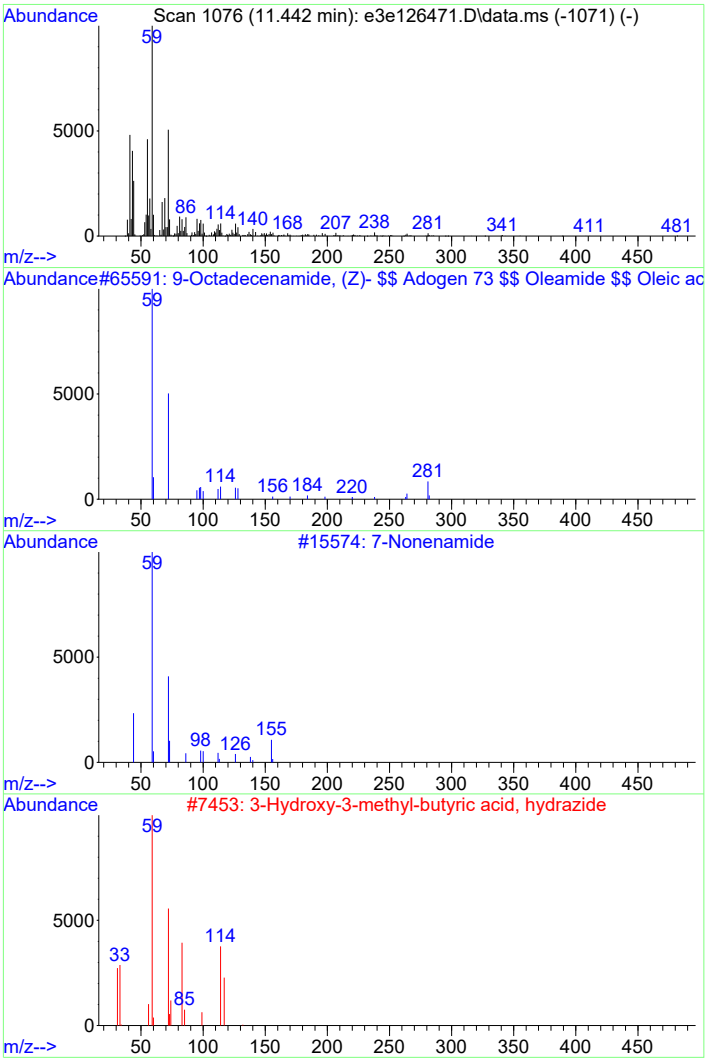
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

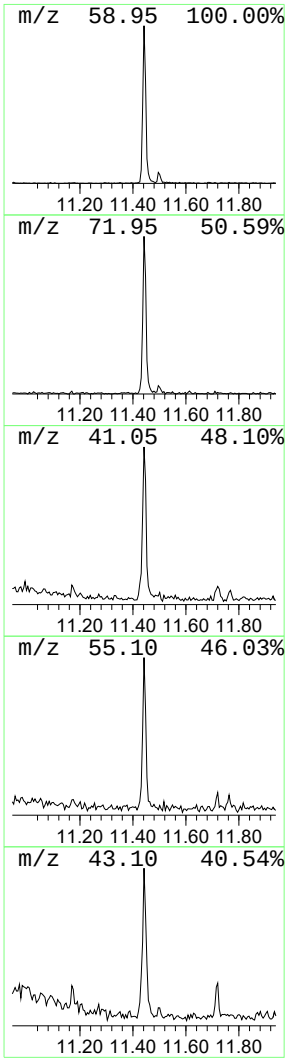
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 59 9-Octadecenamide, Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.442	0.00	1865010	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9-Octadecenamide, (Z)- $$ Adogen...	281	C18H35NO	000301-02-0	91
2	7-Nonenamide	155	C9H17NO	090949-53-4	78
3	3-Hydroxy-3-methyl-butyric acid,...	132	C5H12N2O2	000000-00-0	59
4	Benzeneethanamine, 2-fluoro-.bet...	229	C11H16FNO3	061338-98-5	56
5	Tetradecanamide $$ Myristamide $...	227	C14H29NO	000638-58-4	56





AECOM_e3g_TPHEXT.M Wed Jan 01 08:15:28 2025 39

Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

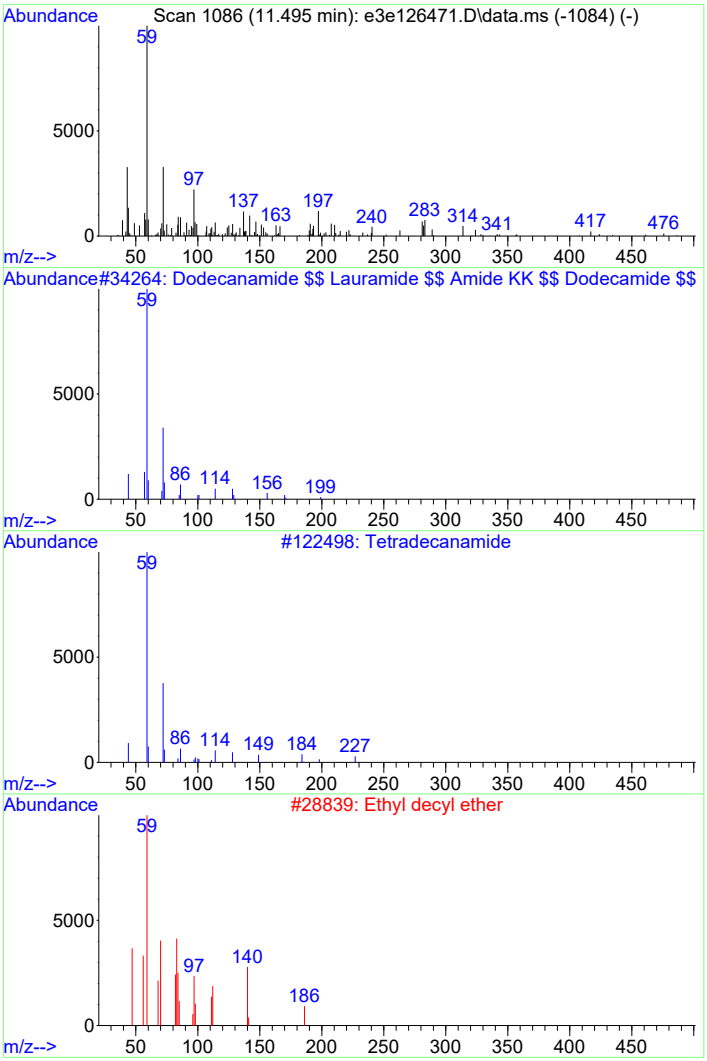
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

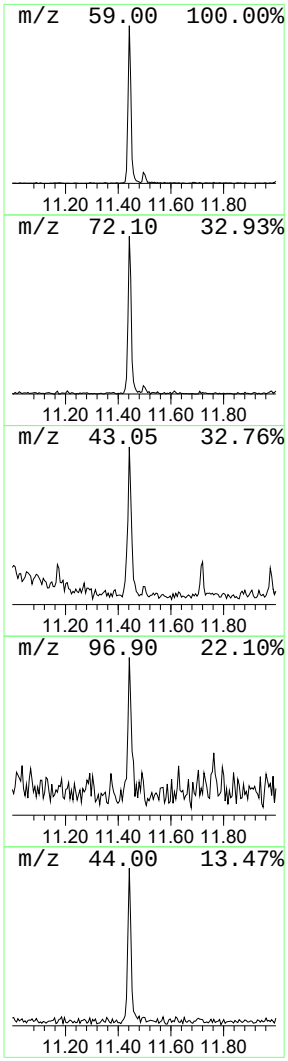
****

Peak Number 60 Dodecanamide Concentration Rank 47

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.496	0.00	73517	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecanamide $$ Lauramide $$ Ami...	199	C12H25NO	001120-16-7	58
2	Tetradecanamide	227	C14H29NO	000638-58-4	50
3	Ethyl decyl ether	186	C12H26O	000000-00-0	50
4	Nonanamide $$ Nonamide $$ Pelarg...	157	C9H19NO	001120-07-6	50
5	4-O-Acetyl-2,5-di-O-methyl-3,6-d...	215	C10H17NO4	000000-00-0	43





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Library Search Compound Report

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Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

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Quant Title : 8270C Calibration

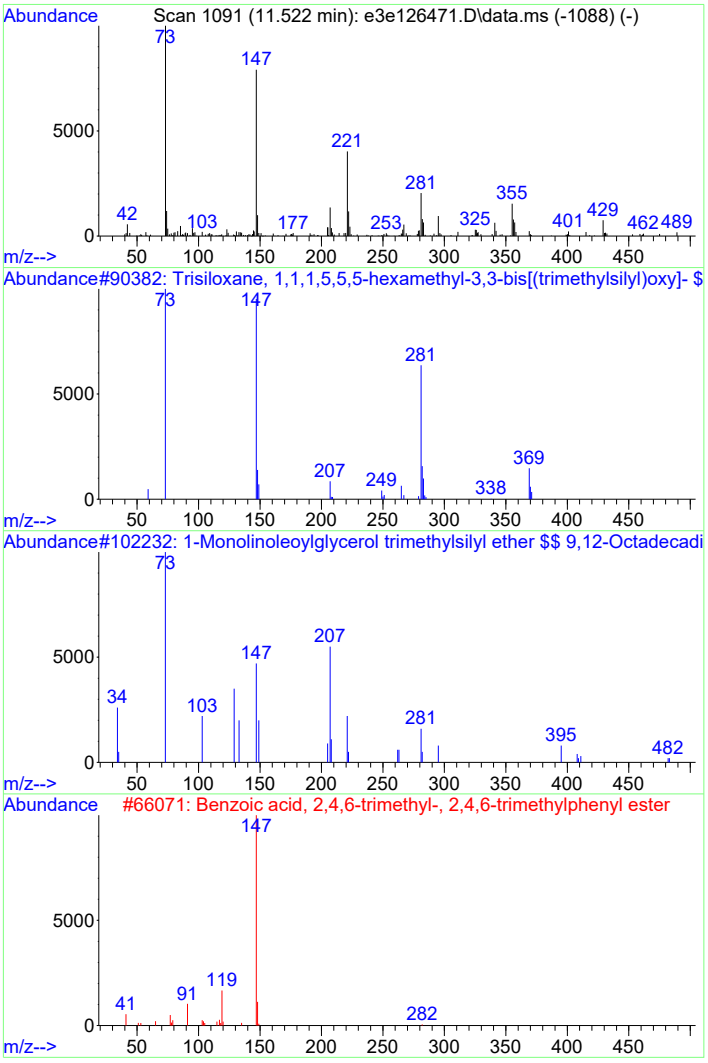
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

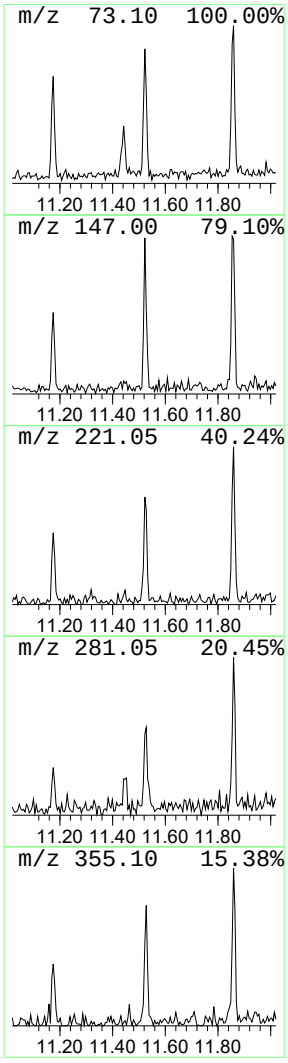
****

Peak Number 61 Siloxane Concentration Rank 22

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.522	0.00	285282	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	47
2	1-Monolinoleoylglycerol trimethy...	498	C27H54O4Si2	054284-45-6	36
3	Benzoic acid, 2,4,6-trimethyl-, ...	282	C19H22O2	001504-38-7	30
4	Trimethylsilyl catecholpyruvate ...	484	C21H40O5Si4	027750-79-4	23
5	1,13-Bis(trimethlysilyl)tridecane	360	C19H44O2Si2	000000-00-0	17





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Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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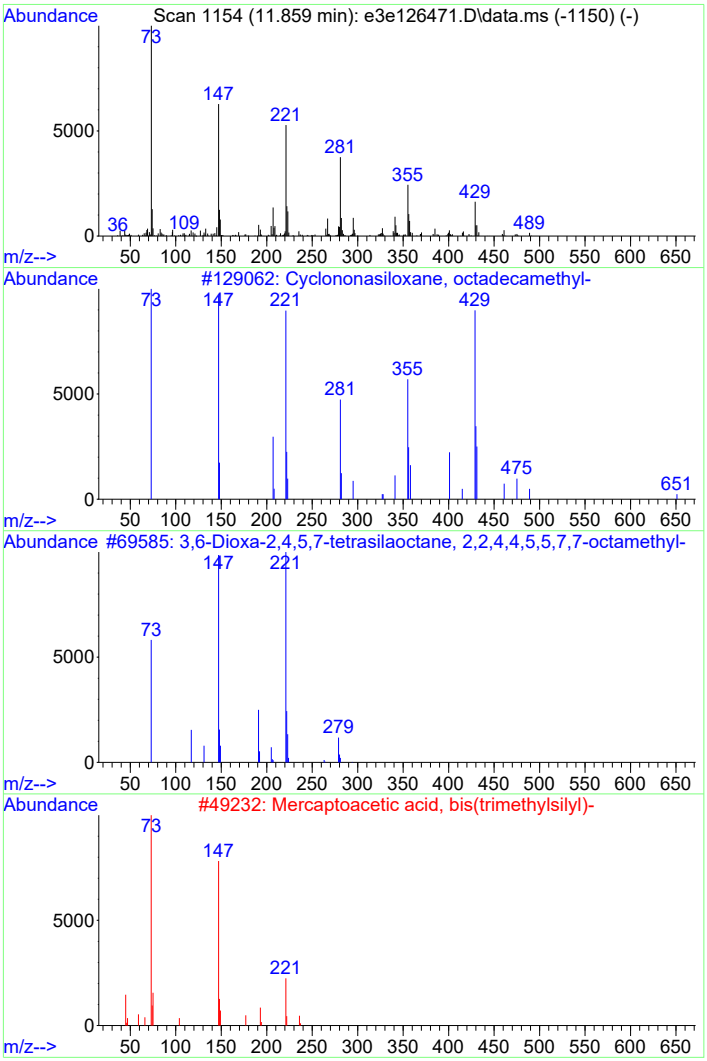
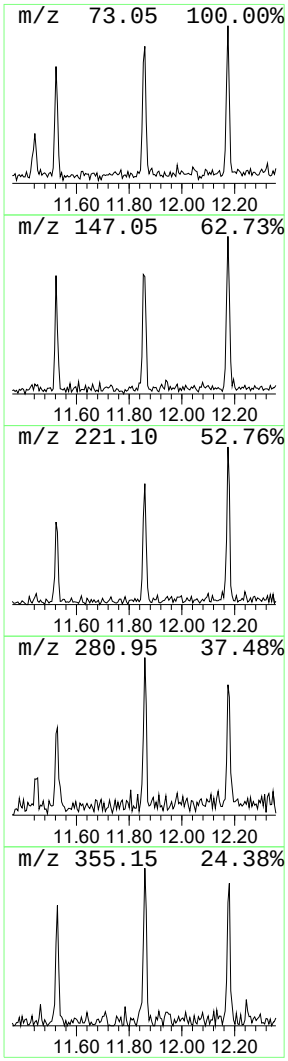
Peak Number 62 Siloxane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.859	0.00	381389	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	83
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	43
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	32
4	Nickel, bis(N,N,N'-trimethyl-o-p...	356	C18H26N4Ni	000000-00-0	18
5	Barbituric acid, 5-allyl-5-(2-cy...	262	C14H18N2O3	028239-48-7	18





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ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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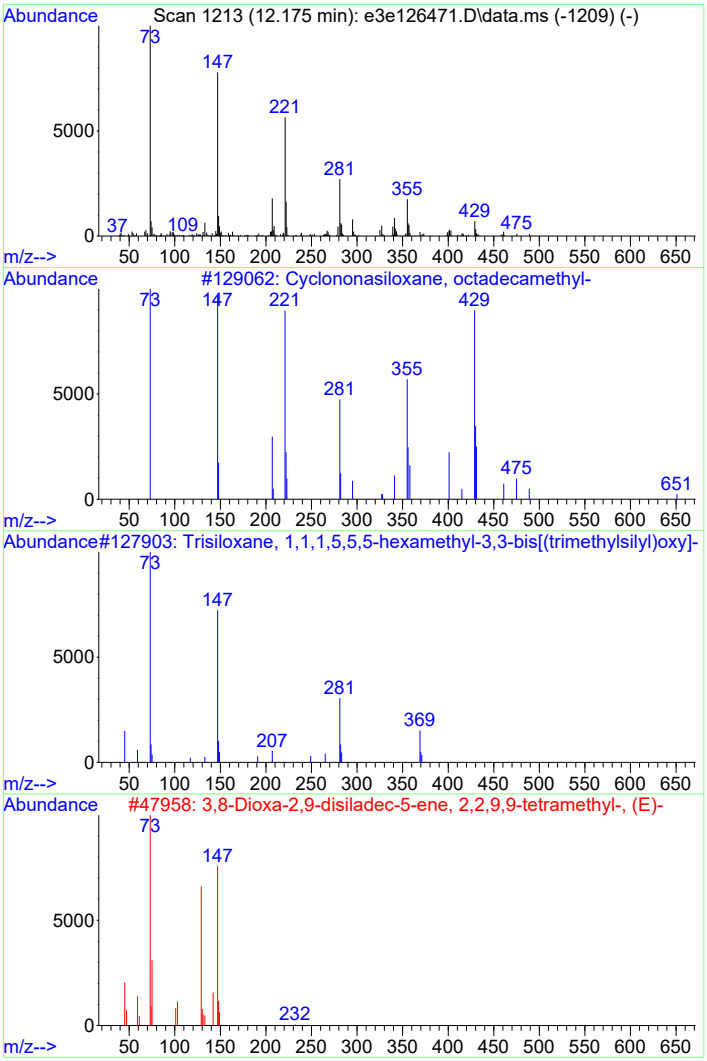
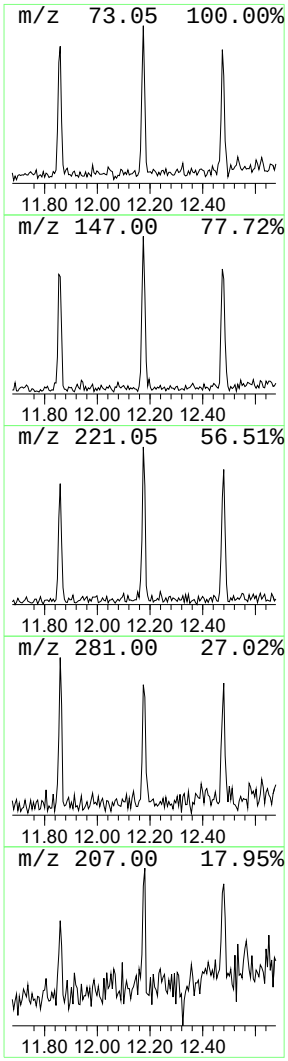
Peak Number 64 Siloxane Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.175	0.00	379589	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	83
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	38
3	3,8-Dioxa-2,9-disiladec-5-ene, 2...	232	C10H24O2Si2	053326-59-3	38
4	N-Benzhydrylidene-1-(2,4,6-trime...	343	C24H25NO	089839-57-6	35
5	dl-Xylitol, cyclic 2,3-(phenylbo...	238	C11H15BO5	074793-46-7	35





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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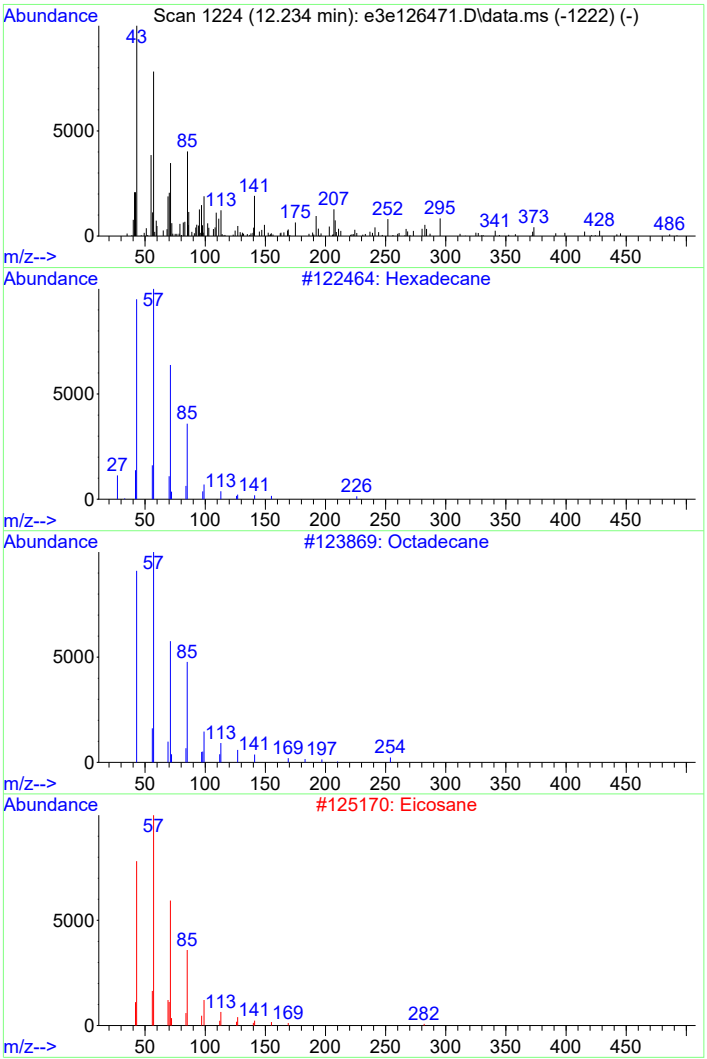
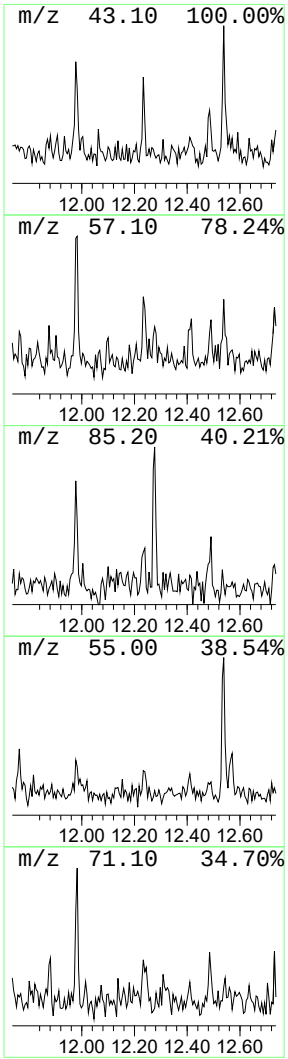
Peak Number 65 Alkane Concentration Rank 48

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.234	0.00	66126	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecane	226	C16H34	000544-76-3	35
2	Octadecane	254	C18H38	000593-45-3	35
3	Eicosane	282	C20H42	000112-95-8	35
4	Nonadecane	268	C19H40	000629-92-5	35
5	Hydroxylamine, O-decyl- $$ O-Dec...	173	C10H23NO	029812-79-1	35





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ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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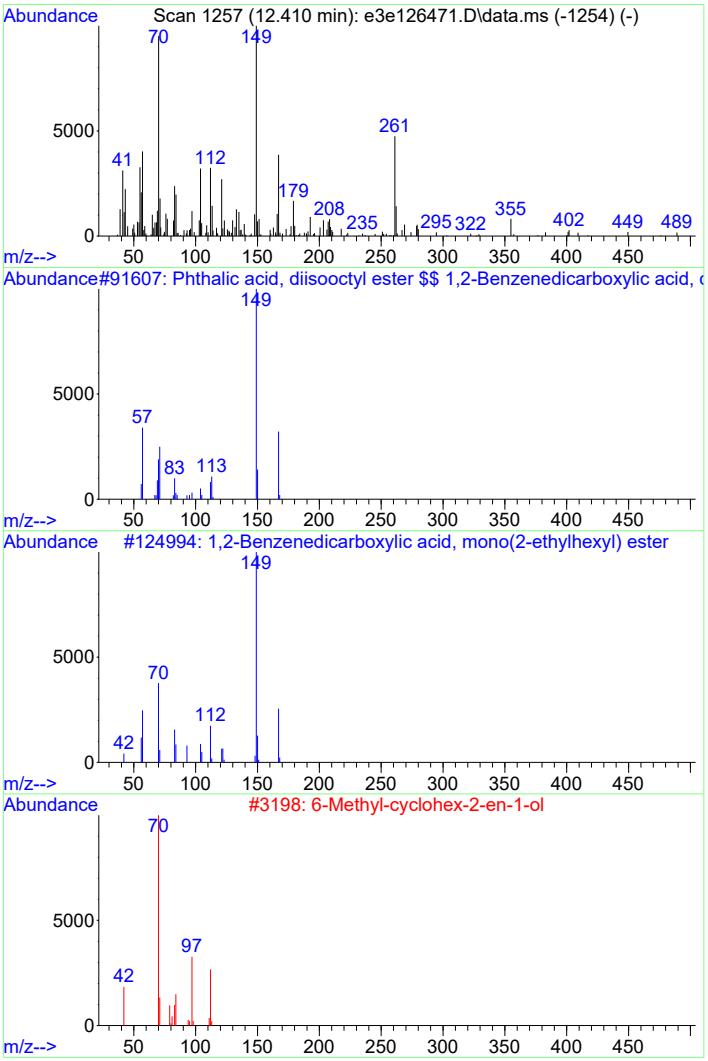
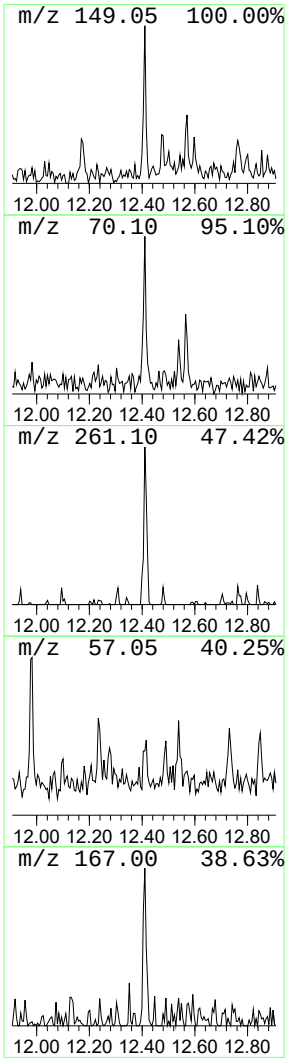
Peak Number 66 Phthalic acid, diisooctyl e... Concentration Rank 31

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.410	174.00	174364	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Phthalic acid, diisooctyl ester ...	390	C24H38O4	001330-91-2	35
2	1,2-Benzenedicarboxylic acid, mo...	278	C16H22O4	004376-20-9	32
3	6-Methyl-cyclohex-2-en-1-ol	112	C7H12O	000000-00-0	22
4	1,2-Benzenedicarboxylic acid, 2-...	322	C18H26O5	033374-28-6	16
5	Didodecyl phthalate $$ 1,2-Benze...	502	C32H54O4	002432-90-8	14





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(b) (4)

Library Search Compound Report

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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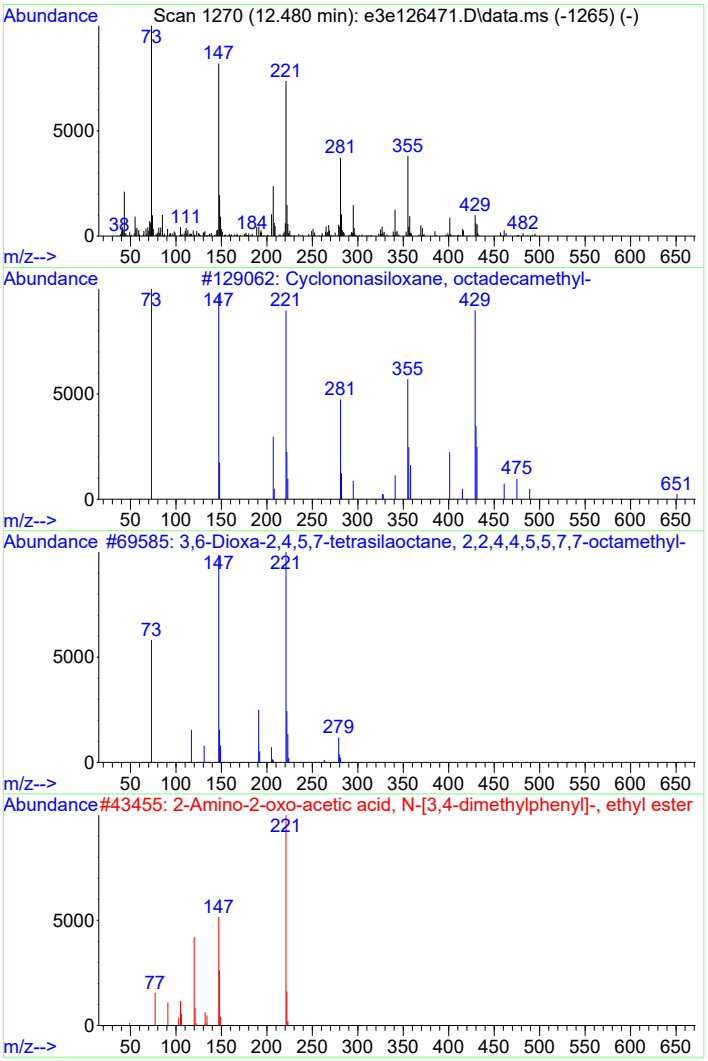
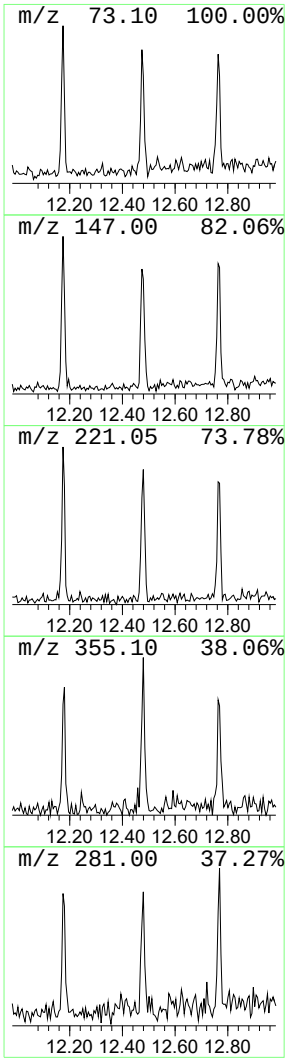
Peak Number 67 Siloxane Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.480	0.00	470468	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	72
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
3	2-Amino-2-oxo-acetic acid, N-[3,...	221	C12H15NO3	000000-00-0	38
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	22
5	3,4-Bis-(methylthio)-quinoline	221	C11H11NS2	000000-00-0	18





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(b) (4)

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Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

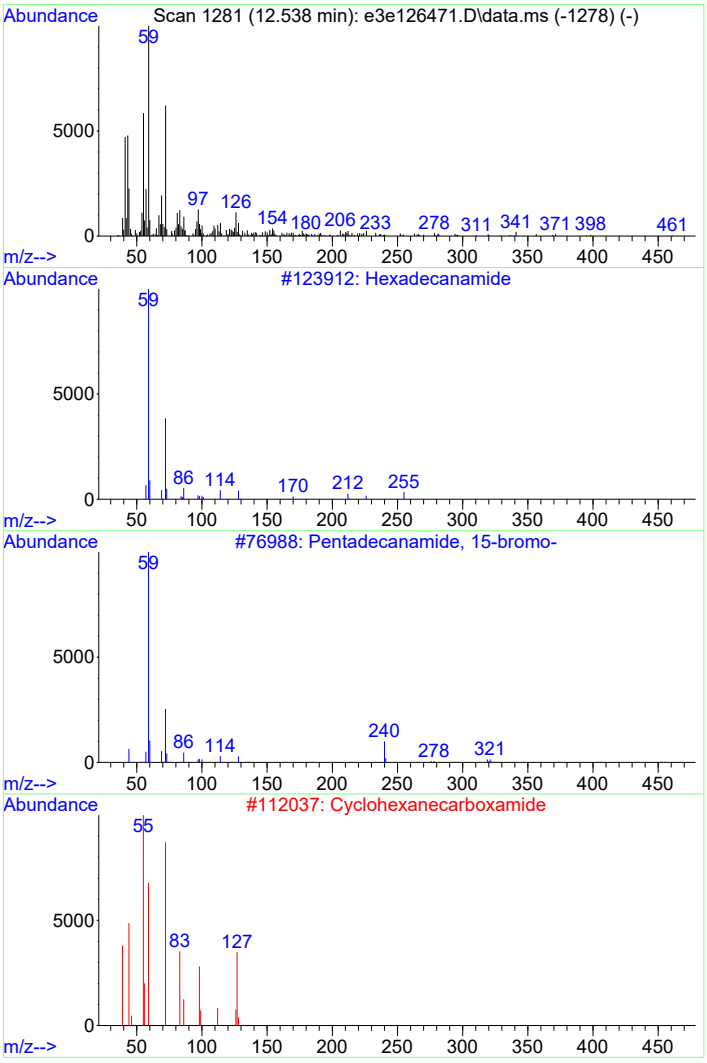
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

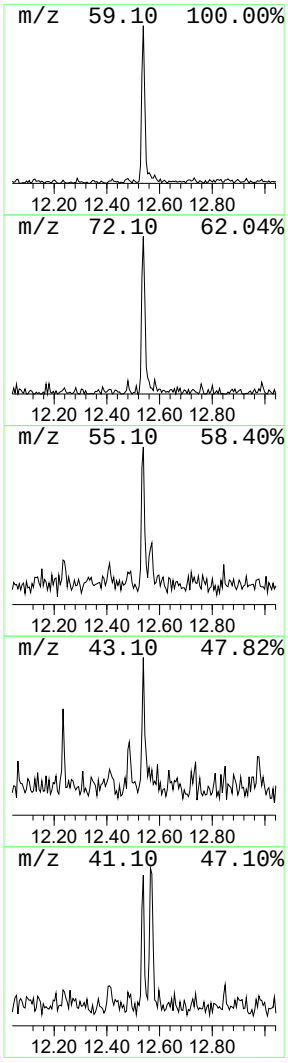
****

Peak Number 68 Hexadecanamide Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.539	0.00	394206	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecanamide	255	C16H33NO	000629-54-9	50
2	Pentadecanamide, 15-bromo-	319	C15H30BrNO	000000-00-0	50
3	Cyclohexanecarboxamide	127	C7H13NO	001122-56-1	47
4	Methyl 15-methoxyhexadecanoate	300	C18H36O3	000000-00-0	35
5	Oxirane, tetramethyl-	100	C6H12O	005076-20-0	35





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Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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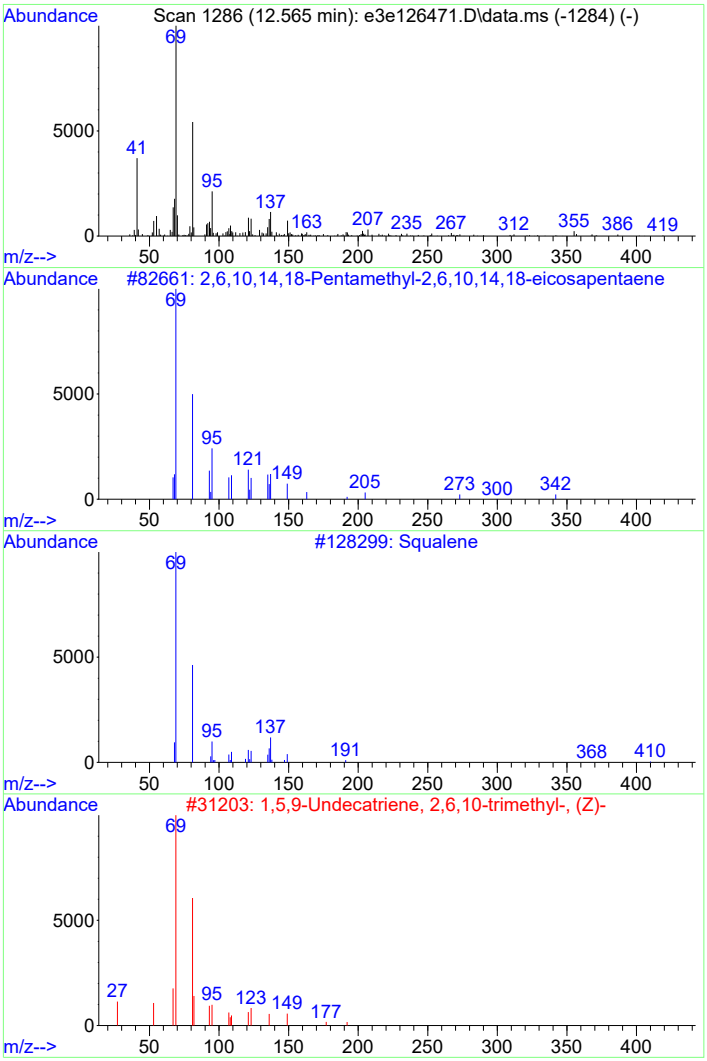
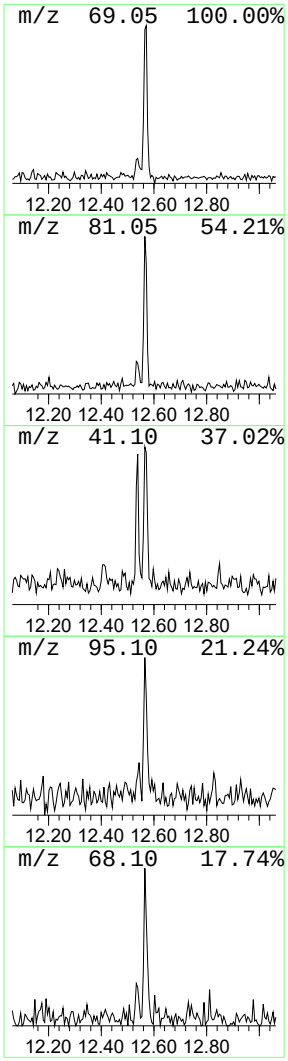
Peak Number 69 Squalene Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.565	0.00	405437	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6,10,14,18-Pentamethyl-2,6,10,...	342	C25H42	075581-03-2	78
2	Squalene	410	C30H50	007683-64-9	74
3	1,5,9-Undecatriene, 2,6,10-trime...	192	C14H24	062951-96-6	59
4	4-Methyl-1,5-Heptadiene	110	C8H14	000998-94-7	59
5	2,6-Octadiene, 2,6-dimethyl-	138	C10H18	002792-39-4	59





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Library Search Compound Report

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ALS Vial : 5 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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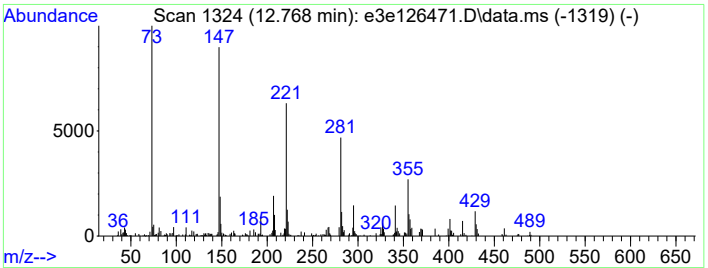
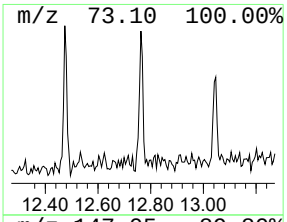
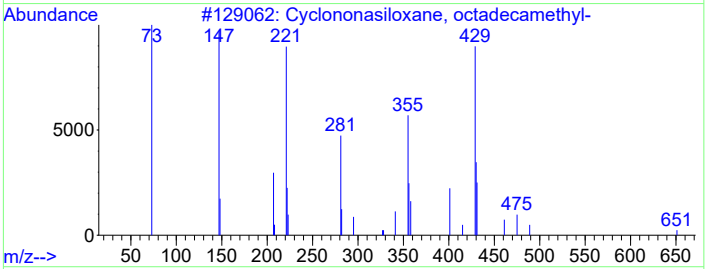
Peak Number 70 Siloxane Concentration Rank 17

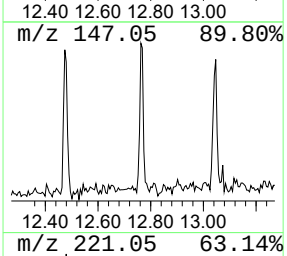
R.T.	EstConc	Area	Relative to ISTD	R.T.
12.769	0.00	360179	External Standard	0.000

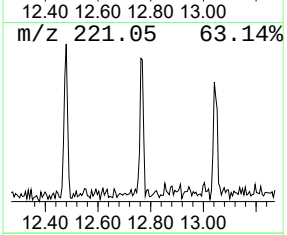
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	72
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25
4	1-Pentamethyldisilyloxytetradecane	344	C19H44OSi2	000000-00-0	22
5	Ethanedioic acid, bis(trimethyls...	234	C8H18O4Si2	018294-04-7	12

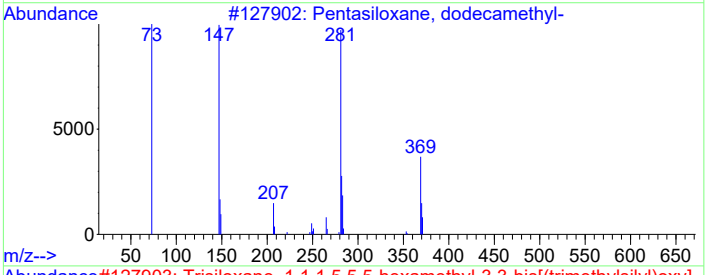


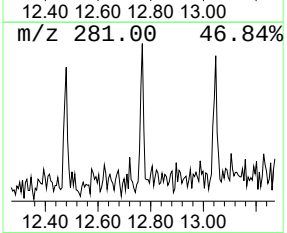


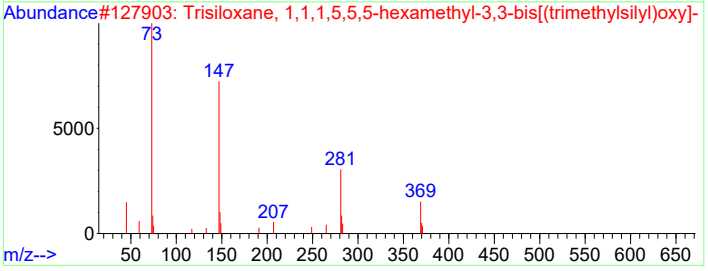


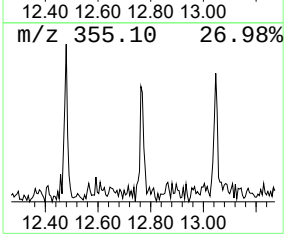












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Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

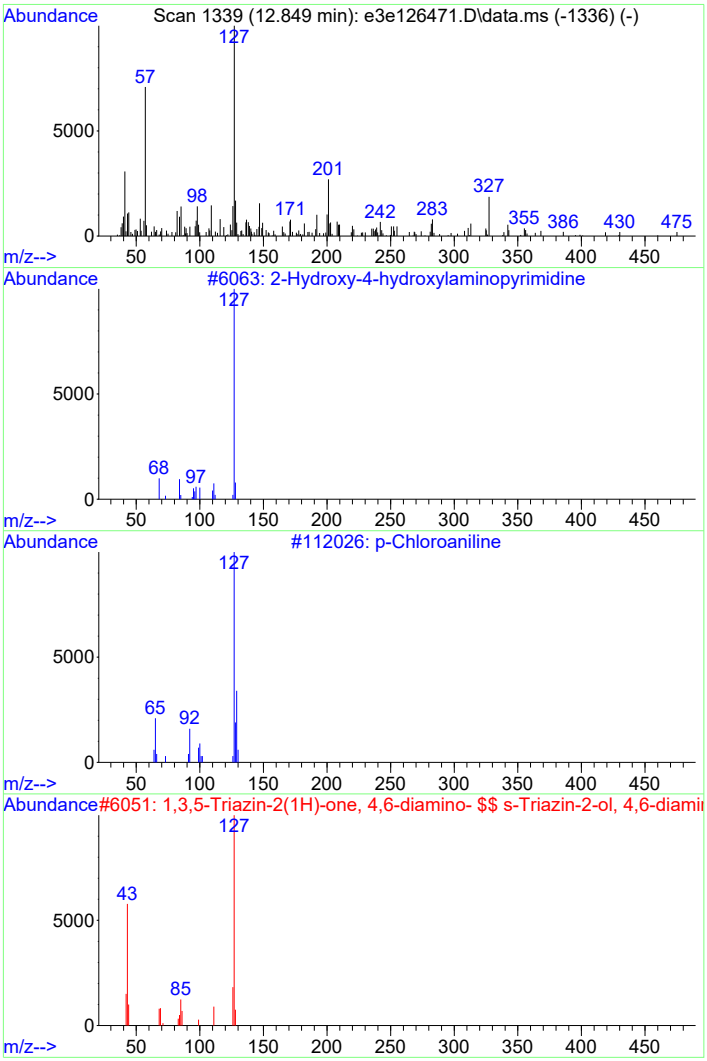
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

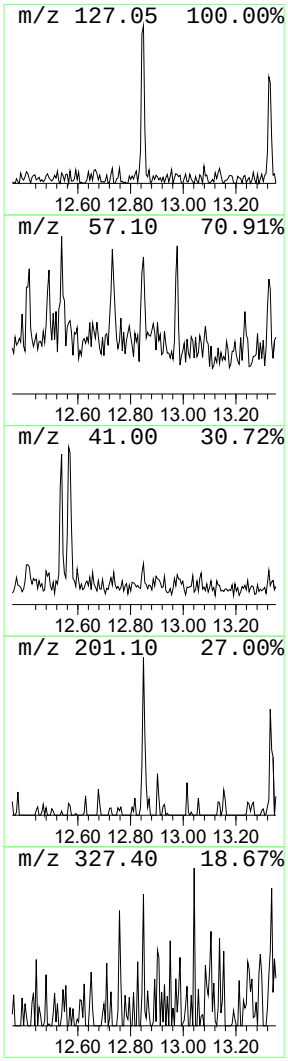
****

Peak Number 71 2-Hydroxy-4-hydroxylaminopy... Concentration Rank 41

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.849	0.00	85175	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2-Hydroxy-4-hydroxylaminopyrimidine	127	C4H5N3O2	020555-88-8	43
2	p-Chloroaniline	127	C6H6ClN	000106-47-8	43
3	1,3,5-Triazin-2(1H)-one, 4,6-dia...	127	C3H5N5O	000645-92-1	43
4	2,3,4-Trimethyl-isoxazol-5(2H)-one	127	C6H9NO2	000000-00-0	43
5	Isothiazole, trimethyl- $$ 3,4,5...	127	C6H9NS	039228-36-9	43





AECOM_e3g_TPHEXT.M Wed Jan 01 08:16:37 2025 50

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

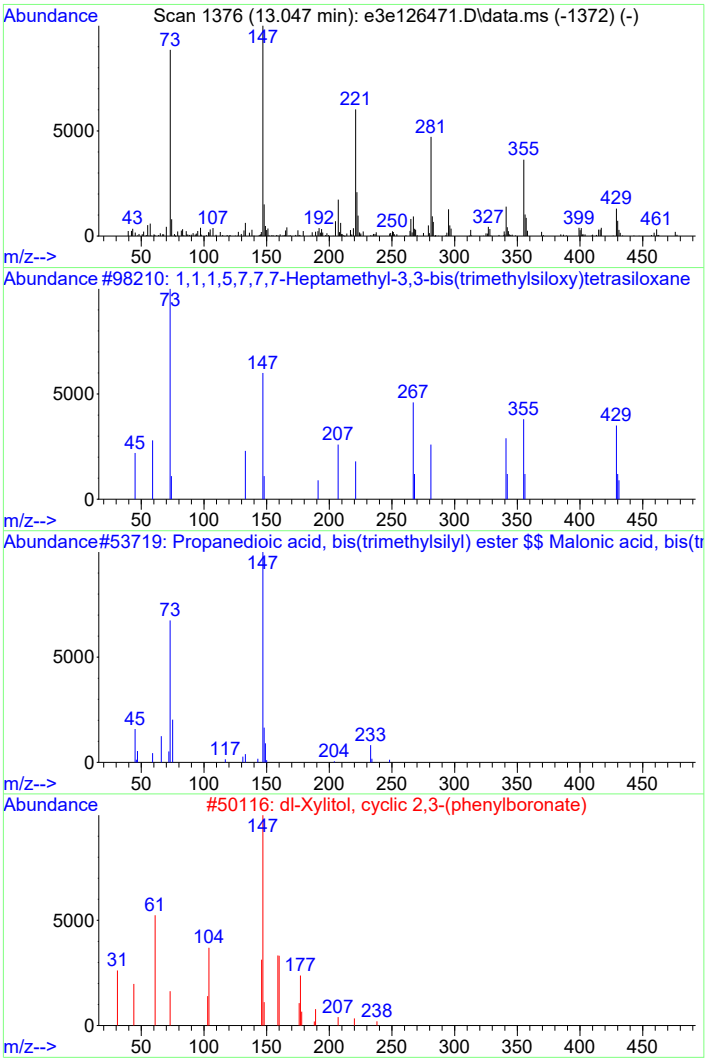
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

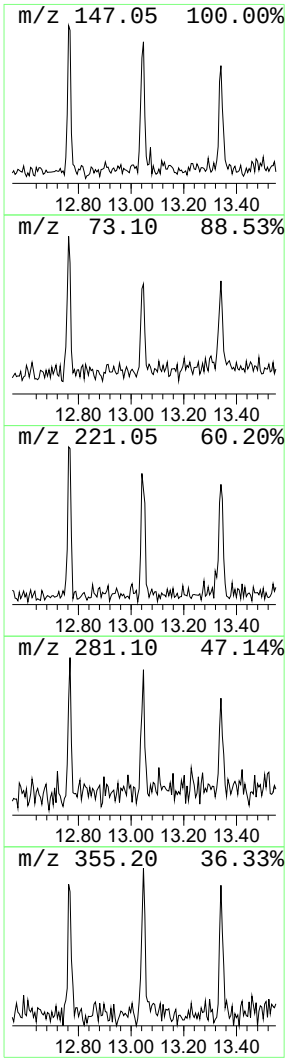
****

Peak Number 72 Siloxane Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.047	0.00	333079	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	42
2	Propanedioic acid, bis(trimethyl...	248	C9H20O4Si2	018457-04-0	22
3	dl-Xylitol, cyclic 2,3-(phenylbo...	238	C11H15BO5	074793-46-7	22
4	N-Benzhydrylidene-1-(2,4,6-trime...	343	C24H25NO	089839-57-6	22
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12





Library Search Compound Report

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Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

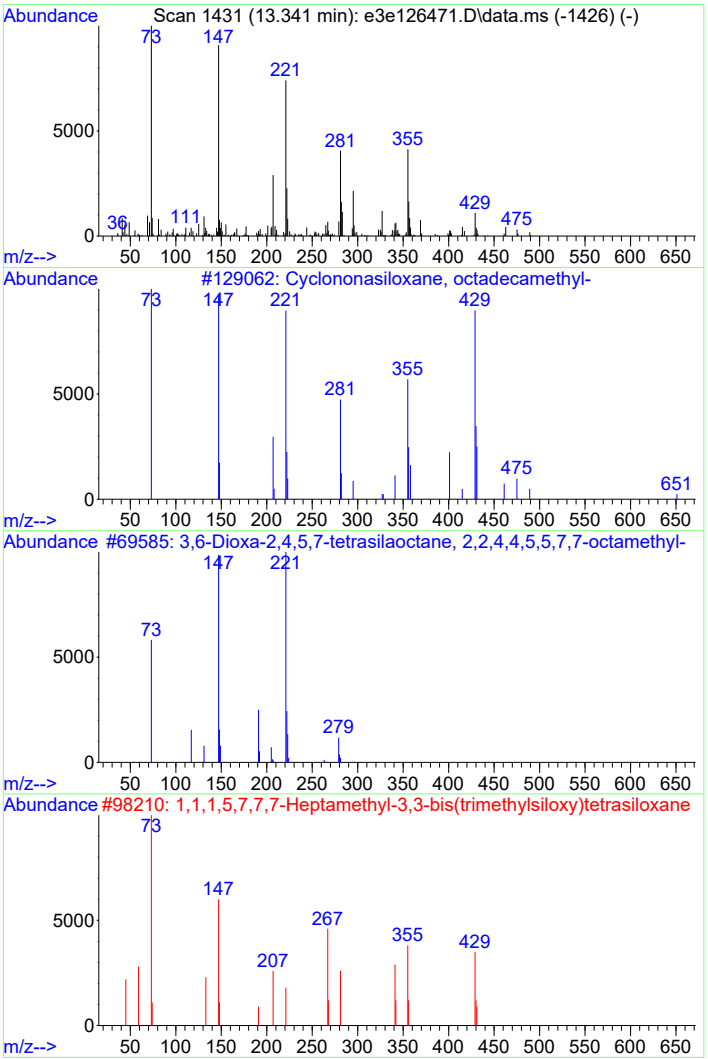
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

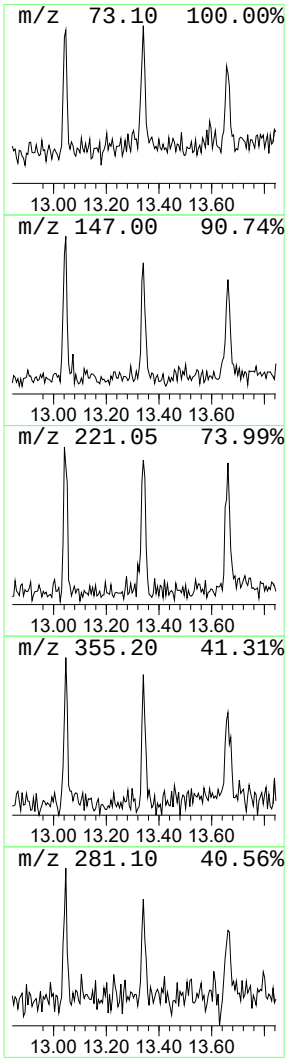
****

Peak Number 74 Siloxane Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.341	0.00	344206	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	38
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
3	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	23
4	Indole, 3-benzoyl- $$ Methanone,...	221	C15H11NO	015224-25-6	14
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12





Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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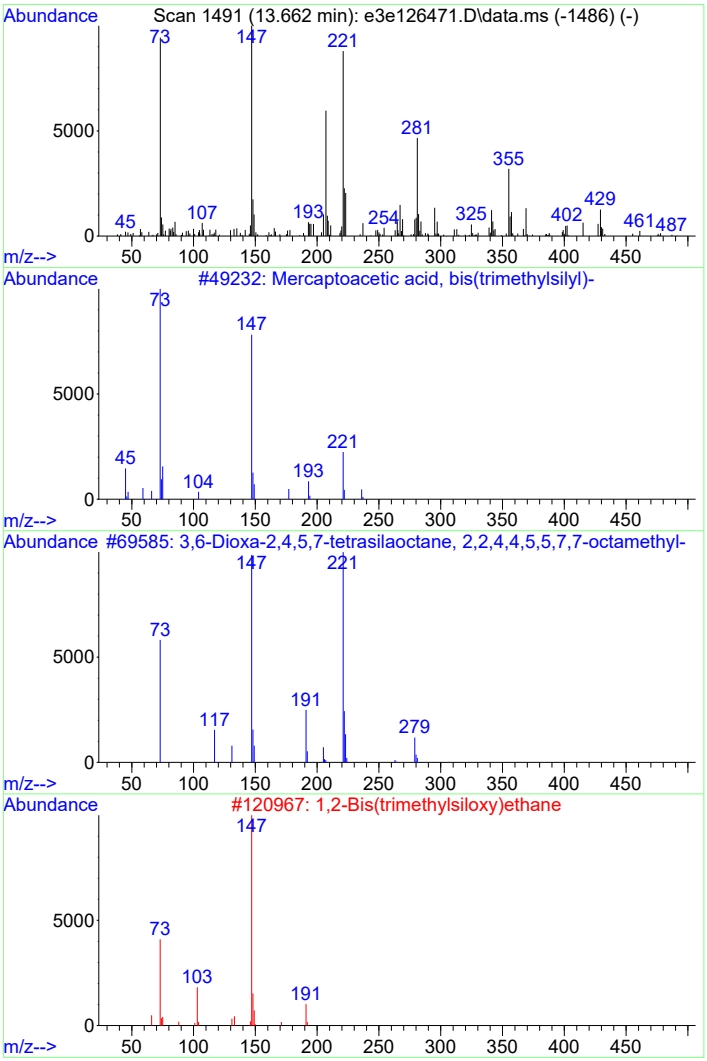
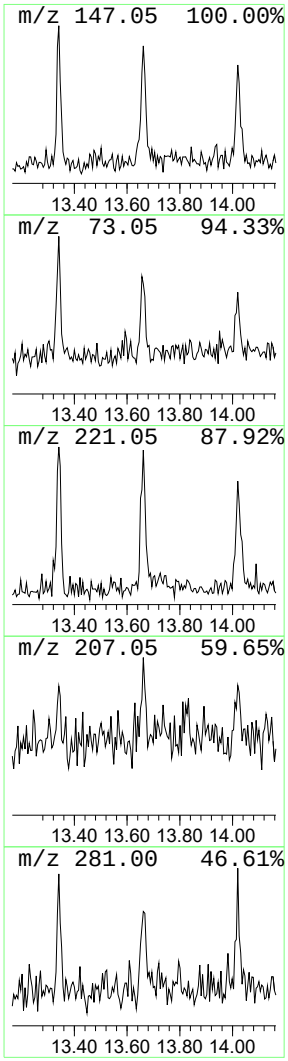
Peak Number 76 Siloxane Concentration Rank 23

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.662	0.00	280889	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	47
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
3	1,2-Bis(trimethylsiloxy)ethane	206	C8H22O2Si2	007381-30-8	10
4	N-Benzhydrylidene-1-(2,4,6-trime...	343	C24H25NO	089839-57-6	10
5	1,4-Benzenediol, 2,5-bis(1,1-dim...	222	C14H22O2	000088-58-4	10





(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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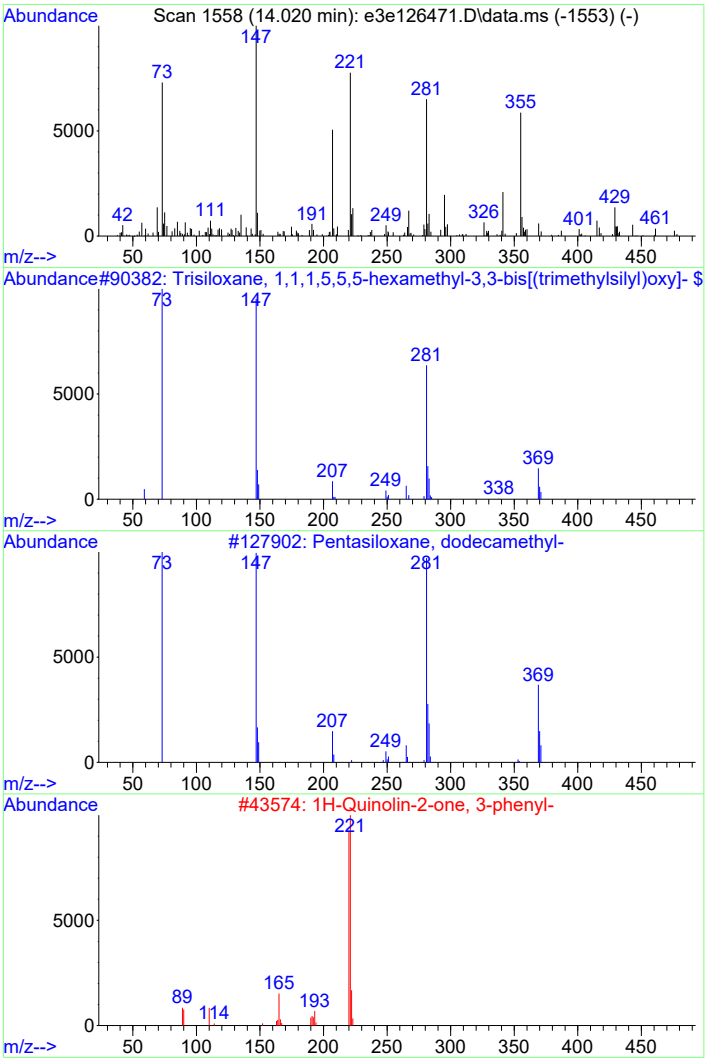
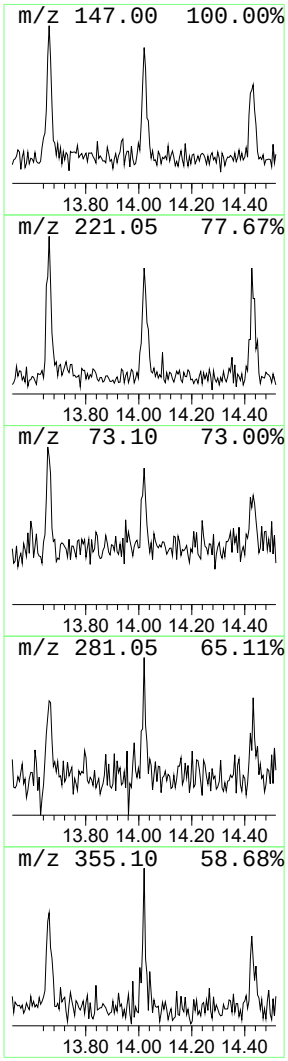
Peak Number 77 Siloxane Concentration Rank 26

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.020	0.00	247678	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12
3	1H-Quinolin-2-one, 3-phenyl-	221	C15H11NO	038035-81-3	10
4	1,3(2H,4H)-Isoquinolinedione, 6,...	369	C20H19NO6	000000-00-0	10
5	Pentasiloxane, dodecamethyl- $$ ...	384	C12H36O4Si5	000141-63-9	10





Library Search Compound Report

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Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

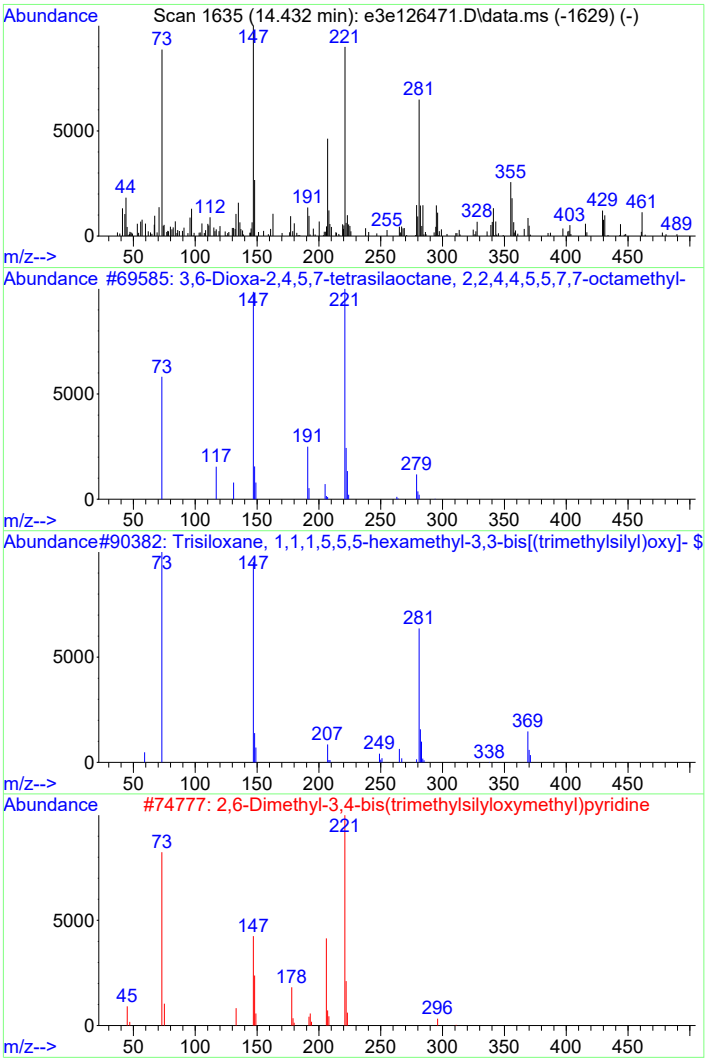
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

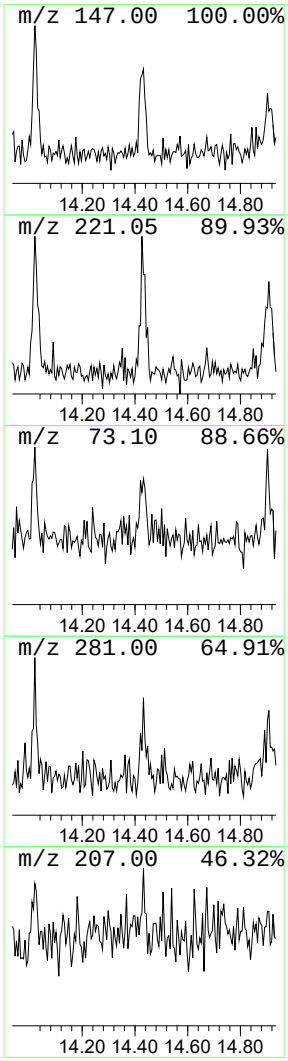
****

Peak Number 78 Siloxane Concentration Rank 28

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.432	0.00	227102	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	37
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	16
3	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	16
4	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	10
5	Trisiloxane, octamethyl-	236	C8H24O2Si3	000107-51-7	10





AECOM_e3g_TPHEXT.M Wed Jan 01 08:16:44 2025 55

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

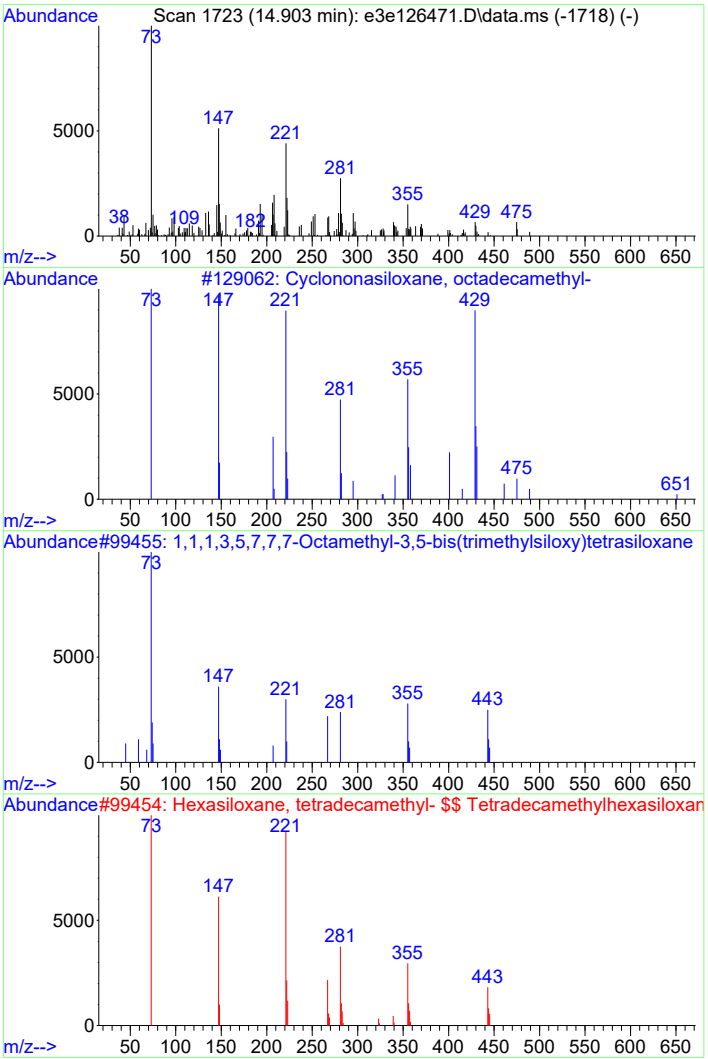
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

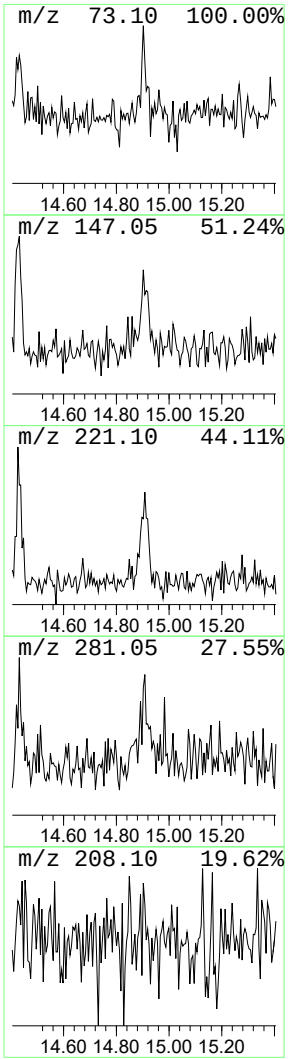
****

Peak Number 79 Siloxane Concentration Rank 33

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.903	0.00	159408	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	43
2	1,1,1,3,5,7,7,7-Octamethyl-3,5-b...	458	C14H42O5Si6	002003-92-1	37
3	Hexasiloxane, tetradecamethyl- $...	458	C14H42O5Si6	000107-52-8	28
4	1,1,1,3,5,5,7,7,7-Nonamethyl-3-(...	384	C12H36O4Si5	038146-99-5	25
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	16





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

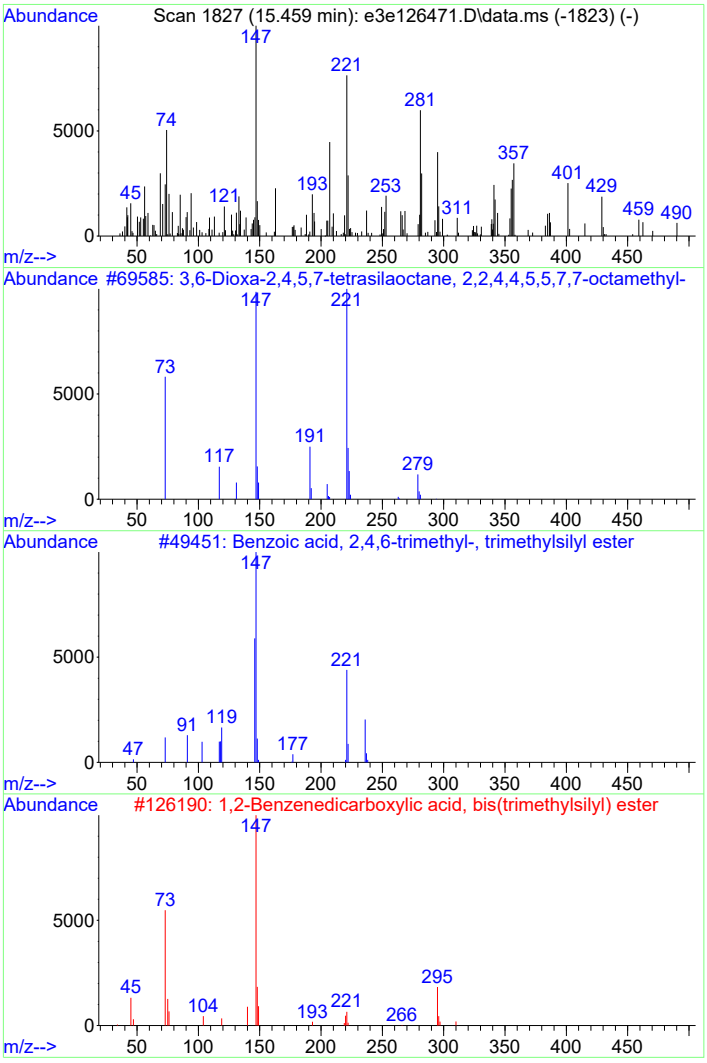
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

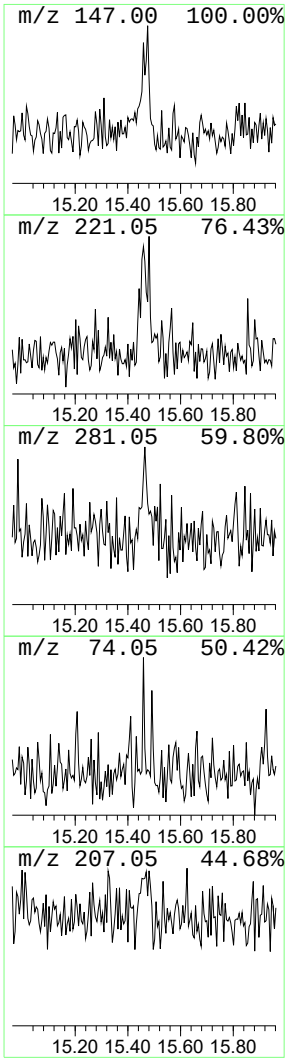
****

Peak Number 80 Siloxane Concentration Rank 29

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.459	0.00	208885	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
2	Benzoic acid, 2,4,6-trimethyl-, ...	236	C13H20O2Si	070079-88-8	25
3	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	12
4	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	12
5	4-Methyl-3-(4-nitrophenyl)-6-p-t...	312	C16H16N4O3	000000-00-0	10





AECOM_e3g_TPHEXT.M Wed Jan 01 08:16:47 2025 57

Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126471.D
Acq On : 31 Dec 2024 12:39 pm
Operator : (b) (6)
Sample : da69622-9T
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard		
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
.alpha.-Methyls...	6.532	0.0		24698	0	0.000	1	1.0
Acetophenone	6.987	0.0		79602	0	0.000	1	1.0
Cyclopentasilox...	7.083	0.0		1771960	0	0.000	1	1.0
Cyclopentasilox...	7.190	0.0		1825070	0	0.000	1	1.0
Siloxane	7.222	0.0		27323	0	0.000	1	1.0
Pentane, 1-ethoxy-	7.431	0.0		25809	0	0.000	1	1.0
1-Propene, 3-[2...	7.725	0.0		133693	0	0.000	1	1.0
Decane, 1,1'-ox...	7.917	0.0		39842	0	0.000	1	1.0
Butanoic acid, ...	8.190	0.0		48321	0	0.000	1	1.0
Phenol, 2-bromo...	8.399	0.0		247674	0	0.000	1	1.0
Siloxane	8.457	0.0		280703	0	0.000	1	1.0
Eicosane, 2-met...	8.490	0.0		26342	0	0.000	1	1.0
Alkane	8.538	0.0		60348	0	0.000	1	1.0
Alkane	8.602	0.0		78318	0	0.000	1	1.0
Alkane	8.639	0.0		376199	0	0.000	1	1.0
Alkane	8.714	0.0		23069	0	0.000	1	1.0
Alkane	8.730	0.0		44326	0	0.000	1	1.0
Alkane	8.757	0.0		53940	0	0.000	1	1.0
Alkane	8.794	0.0		378170	0	0.000	1	1.0
Alkane	8.837	0.0		83749	0	0.000	1	1.0
Alkane	8.859	0.0		79533	0	0.000	1	1.0
Alkane	8.885	0.0		117781	0	0.000	1	1.0
Alkane	9.099	0.0		82783	0	0.000	1	1.0
Alkane	9.131	0.0		728079	0	0.000	1	1.0
Alkane	9.180	0.0		192094	0	0.000	1	1.0
Alkane	9.201	0.0		168416	0	0.000	1	1.0
Alkane	9.228	0.0		119031	0	0.000	1	1.0
Alkane	9.324	0.0		688147	0	0.000	1	1.0
Alkane	9.463	0.0		870587	0	0.000	1	1.0
Alkane	9.789	0.0		609228	0	0.000	1	1.0
Alkane	9.891	0.0		248682	0	0.000	1	1.0
Alkane	10.410	0.0		412872	0	0.000	1	1.0
Alkane	10.704	0.0		136077	0	0.000	1	1.0
Siloxane	10.806	0.0		298900	0	0.000	1	1.0
9-Octadecenamide,	11.442	0.0		1865010	0	0.000	1	1.0
Dodecanamide	11.496	0.0		73517	0	0.000	1	1.0
Siloxane	11.522	0.0		285282	0	0.000	1	1.0
Siloxane	11.859	0.0		381389	0	0.000	1	1.0
Siloxane	12.175	0.0		379589	0	0.000	1	1.0
Alkane	12.234	0.0		66126	0	0.000	1	1.0
Phthalic acid, ...	12.410	174.0		174364	0	0.000	1	1.0
Siloxane	12.480	0.0		470468	0	0.000	1	1.0
Hexadecanamide	12.539	0.0		394206	0	0.000	1	1.0
Squalene	12.565	0.0		405437	0	0.000	1	1.0
Siloxane	12.769	0.0		360179	0	0.000	1	1.0
2-Hydroxy-4-hyd...	12.849	0.0		85175	0	0.000	1	1.0
Siloxane	13.047	0.0		333079	0	0.000	1	1.0
Siloxane	13.341	0.0		344206	0	0.000	1	1.0
Siloxane	13.662	0.0		280889	0	0.000	1	1.0
Siloxane	14.020	0.0		247678	0	0.000	1	1.0
Siloxane	14.432	0.0		227102	0	0.000	1	1.0
Siloxane	14.903	0.0		159408	0	0.000	1	1.0
Siloxane	15.459	0.0		208885	0	0.000	1	1.0

Appendix C. Tier 1 Analysis Tech Memos

Manual Integrations APPROVED (compounds with "m" flag)
(b) (6)

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 01 06:43:19 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	0.000	230	0	0.00		
Target Compounds						Qvalue
40) n-Tricosane (C23)	11.171	57	3896m	3896.00		
41) n-Tetracosane (C24)	11.444	57	6816	6816.00	#	63
42) n-Pentacosane (C25)	11.712	57	12810	12810.00		87
43) n-Hexacosane (C26)	11.974	57	12811	12811.00	#	57
44) n-Heptacosane (C27)	12.225	57	7196m	7196.00		
45) n-Octacosane (C28)	12.503	57	1860	1860.00	#	1
46) n-Nonacosane (C29)	12.739	57	1628	1628.00	#	65
47) n-Triacontane (C30)	12.958	57	4705	4705.00	#	80
53) Siloxane	7.871	429	1970m	1970.00		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

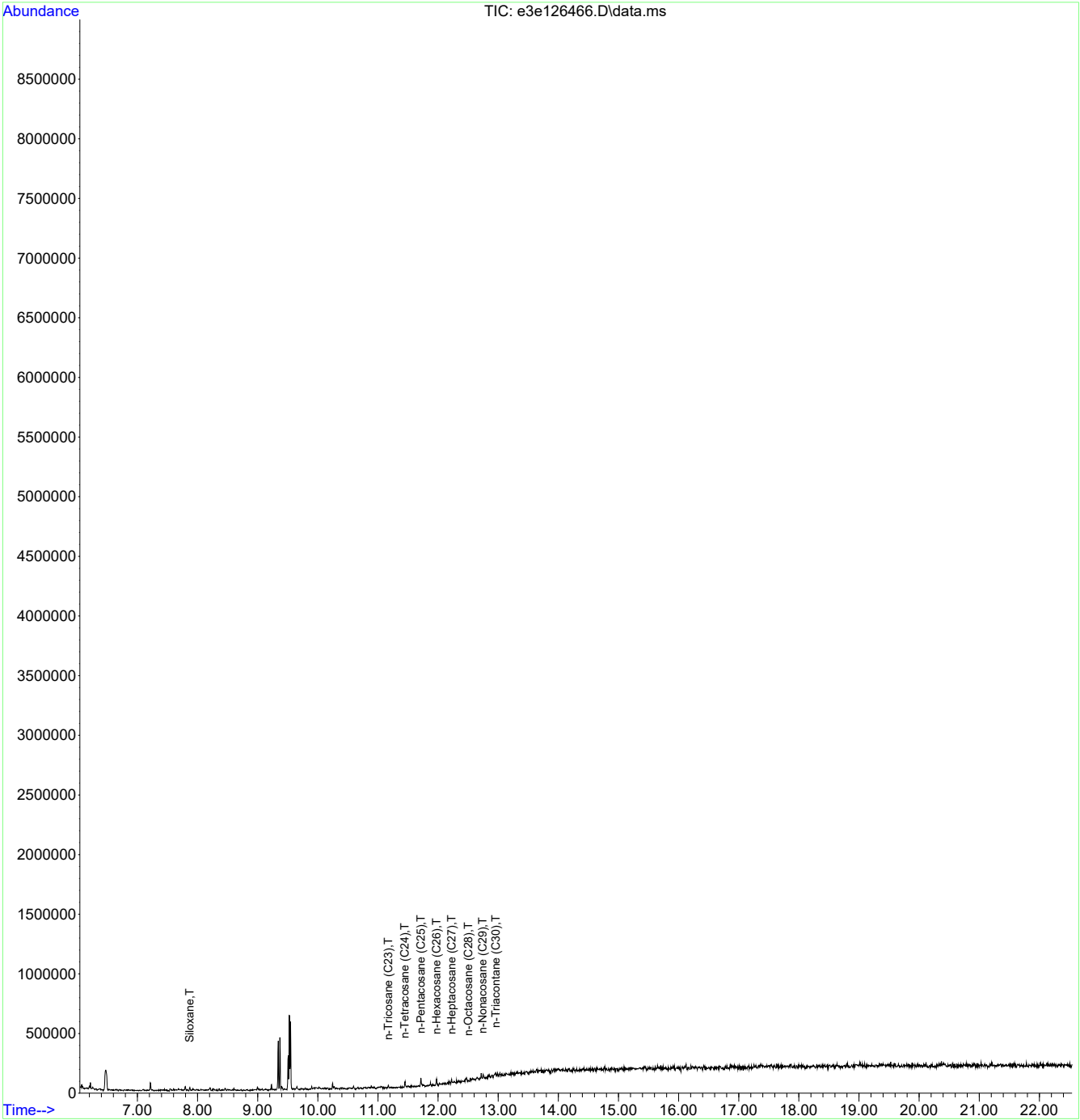
7.2.1
7

Appendix C. Tier 1 Analysis Tech Memos

Quantitation Report (QT Reviewed)

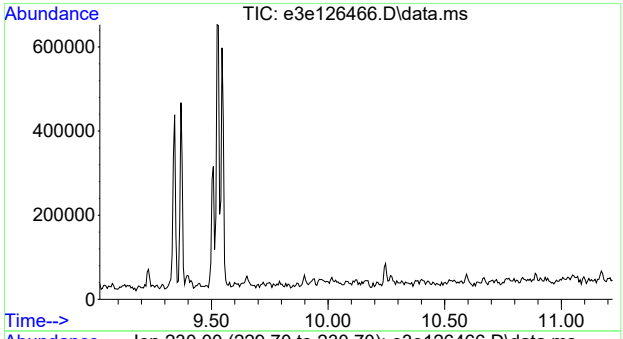
Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 01 06:43:19 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

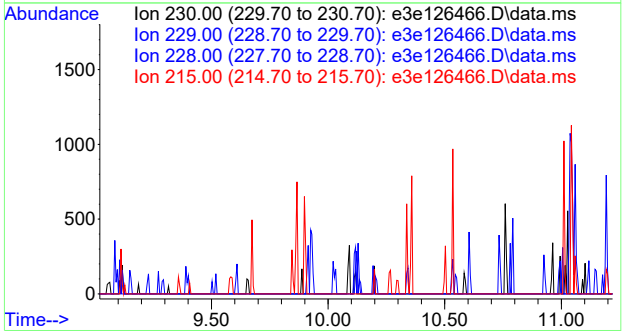


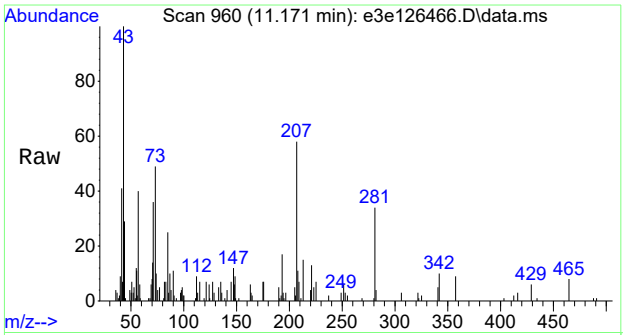
#26
o-Terphenyl
Concen: 0.00
Expected RT: 10.12 min

Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

Tgt Ion: 230

Sig	Exp Ratio
230	100
229	63.0
228	47.3
215	50.0

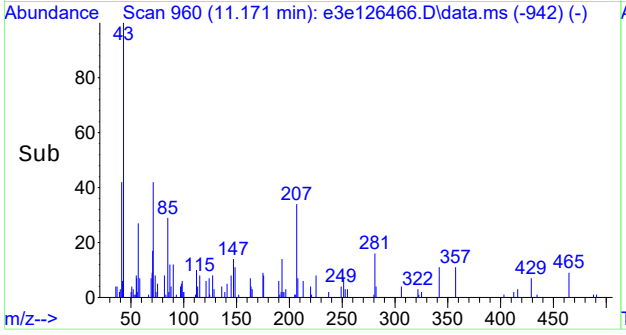


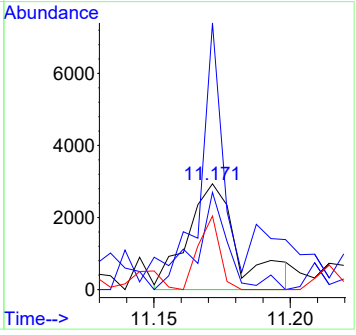


#40
n-Tricosane (C23)
Concen: 3896.00 m
RT: 11.171 min Scan# 960
Delta R.T. -0.003 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

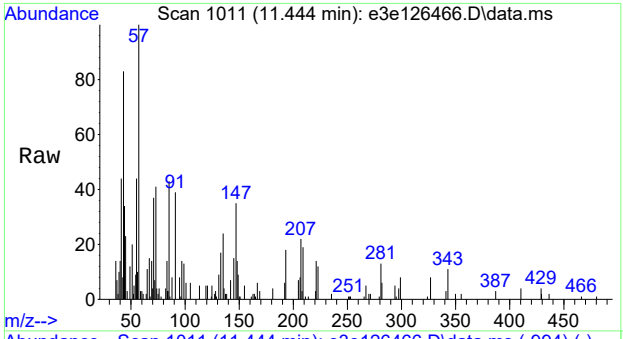
Tgt Ion: 57 Resp: 3896

Ion	Ratio	Lower	Upper
57	100		
43	0.0	49.6	74.4#
71	0.0	43.1	64.7#
85	0.0	36.6	54.8#





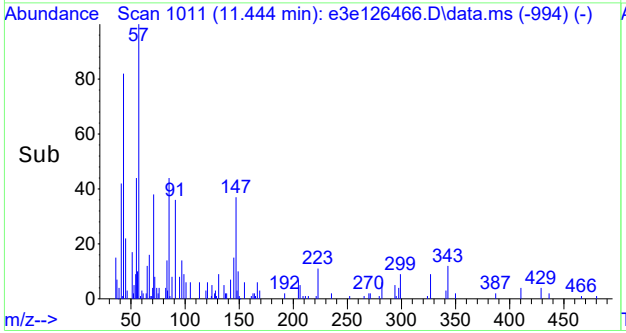
Appendix C. Tier 1 Analysis Tech Memos

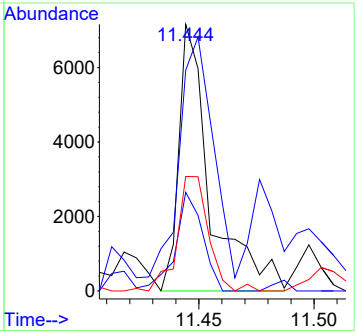


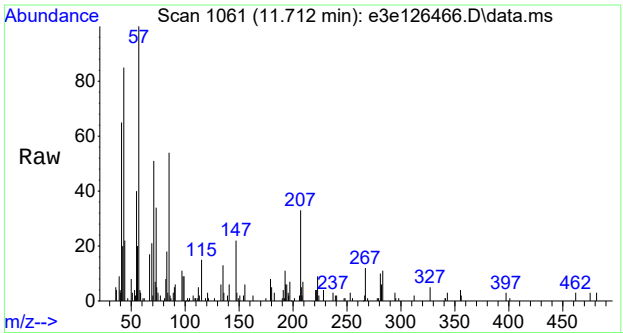
#41
n-Tetracosane (C24)
Concen: 6816.00
RT: 11.444 min Scan# 1011
Delta R.T. -0.008 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

Tgt Ion: 57 Resp: 6816

Ion	Ratio	Lower	Upper
57	100		
43	95.2	50.7	76.1#
71	32.0	57.8	86.8#
85	42.8	44.2	66.2#



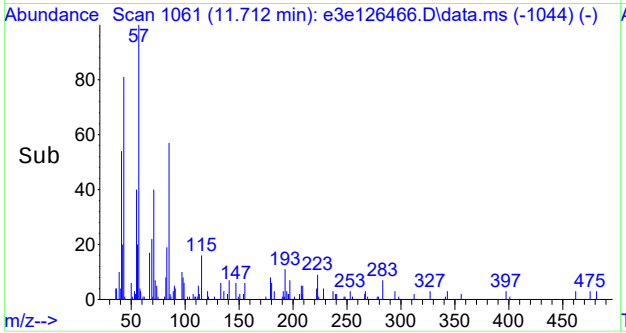


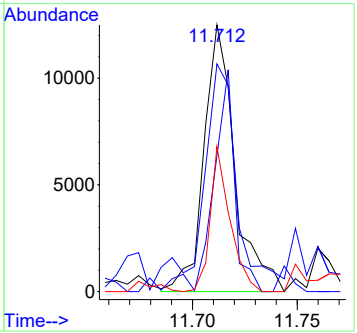


#42
n-Pentacosane (C25)
Concen: 12810.00
RT: 11.712 min Scan# 1061
Delta R.T. -0.008 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

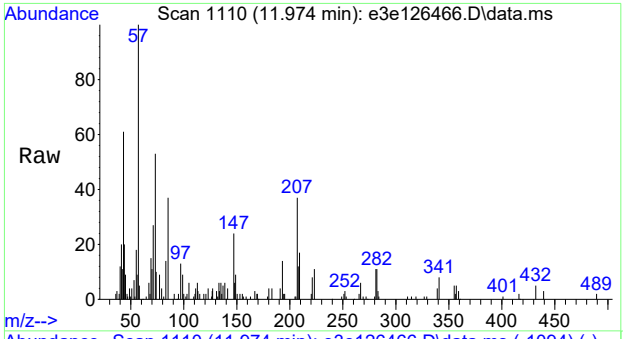
Tgt Ion: 57 Resp: 12810

Ion	Ratio	Lower	Upper
57	100		
43	91.2	63.9	95.9
71	59.1	56.4	84.6
85	34.8	34.0	51.0





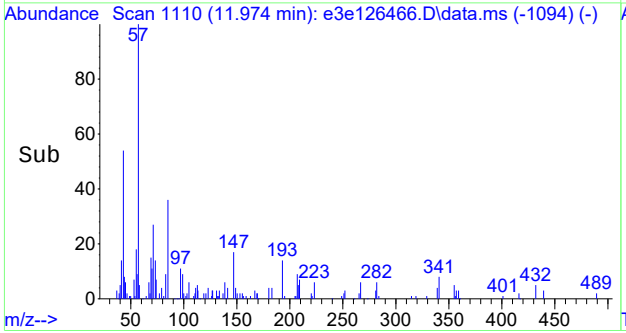
Appendix C. Tier 1 Analysis Tech Memos

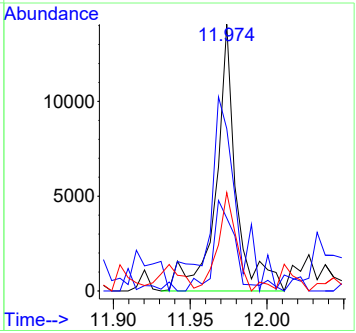


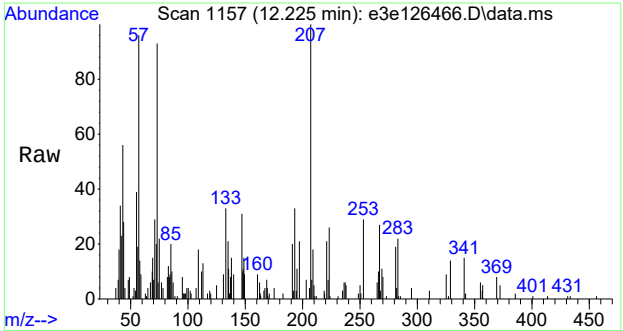
#43
n-Hexacosane (C26)
Concen: 12811.00
RT: 11.974 min Scan# 1110
Delta R.T. -0.014 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

Tgt Ion: 57 Resp: 12811

Ion	Ratio	Lower	Upper
57	100		
43	101.5	50.5	75.7#
71	35.5	58.6	87.8#
85	32.1	45.3	67.9#



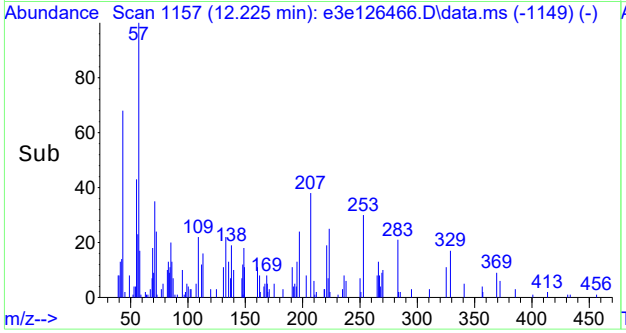


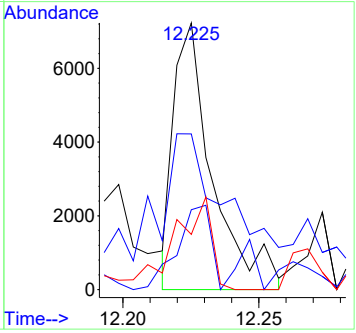


#44
n-Heptacosane (C27)
Concen: 7196.00 m
RT: 12.225 min Scan# 1157
Delta R.T. -0.056 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

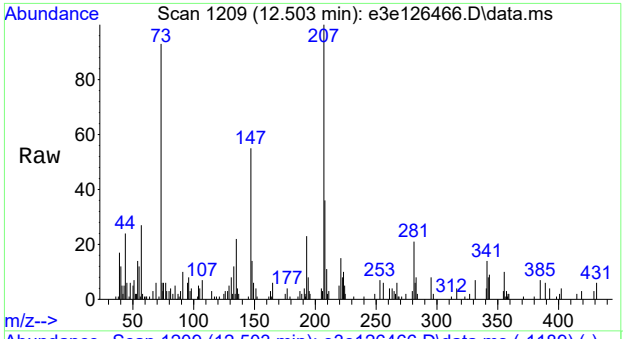
Tgt Ion: 57 Resp: 7196

Ion	Ratio	Lower	Upper
57	100		
43	24.3	60.9	91.3#
71	17.0	72.3	108.5#
85	0.0	69.4	104.0#





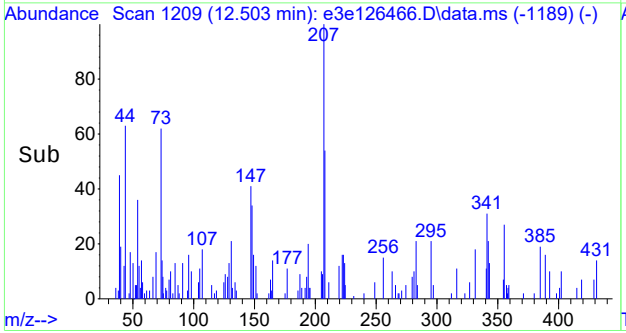
Appendix C. Tier 1 Analysis Tech Memos

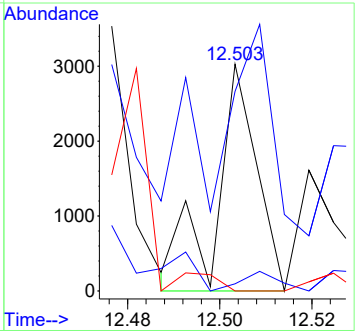


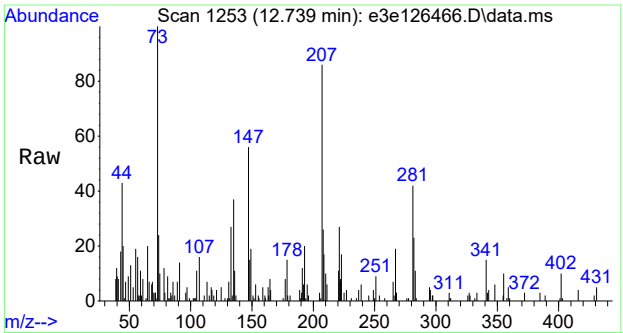
#45
n-Octacosane (C28)
Concen: 1860.00
RT: 12.503 min Scan# 1209
Delta R.T. 0.008 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

Tgt Ion: 57 Resp: 1860

Ion	Ratio	Lower	Upper
57	100		
43	187.8	48.6	73.0#
71	0.0	58.3	87.5#
85	0.0	45.0	67.6#



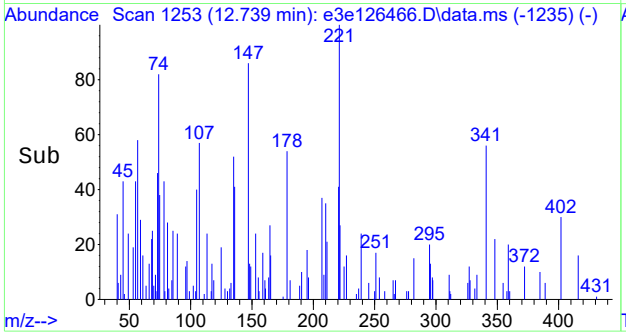


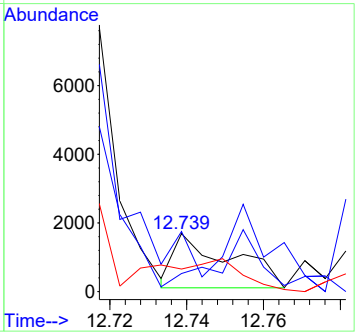


#46
n-Nonacosane (C29)
Concen: 1628.00
RT: 12.739 min Scan# 1253
Delta R.T. -0.003 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

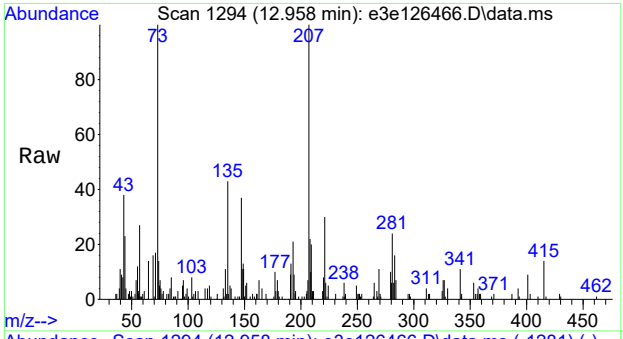
Tgt Ion: 57 Resp: 1628

Ion	Ratio	Lower	Upper
57	100		
43	127.6	52.9	79.3#
71	95.5	62.7	94.1#
85	77.6	54.2	81.2





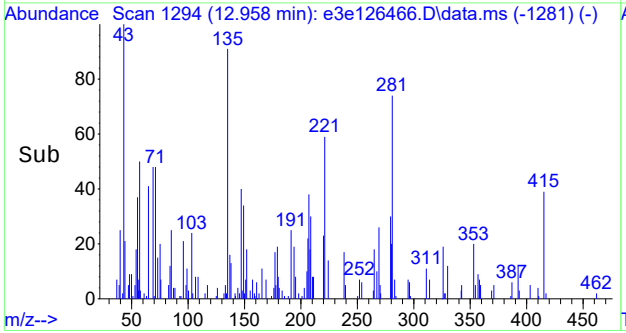
Appendix C. Tier 1 Analysis Tech Memos

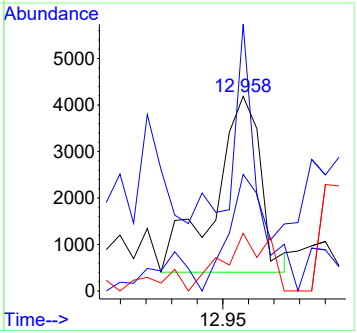


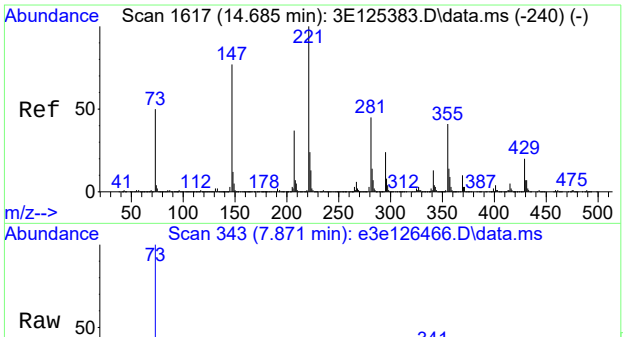
#47
n-Triacontane (C30)
Concen: 4705.00
RT: 12.958 min Scan# 1294
Delta R.T. -0.030 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

Tgt Ion: 57 Resp: 4705

Ion	Ratio	Lower	Upper
57	100		
43	53.3	47.7	71.5
71	56.4	58.2	87.4#
85	32.4	45.5	68.3#



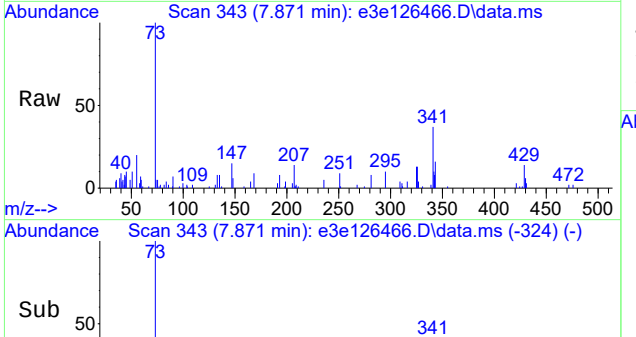


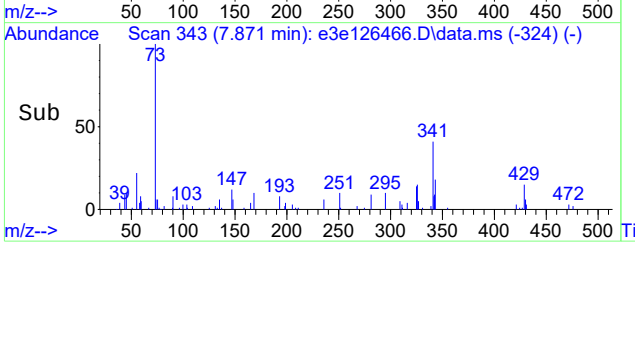


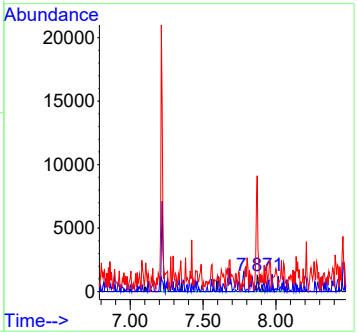
#53
Siloxane
Concen: 1970.00 m
RT: 7.871 min Scan# 343
Delta R.T. 0.002 min
Lab File: e3e126466.D
Acq: 31 Dec 2024 8:24 am

Tgt Ion:429 Resp: 1970

Ion	Ratio	Lower	Upper
429	100		
355	0.0	0.0	20.0
281	0.0	0.0	20.0
73	0.0	0.0	20.0







LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126466.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.636	107	112	113	rBV4	9271	9876	1.94%	0.270%
2	6.695	120	123	125	rBV3	12879	12268	2.41%	0.336%
3	6.780	136	139	143	rBV6	10251	15884	3.13%	0.434%
4	6.812	143	145	148	rVV4	8236	9037	1.78%	0.247%
5	7.042	184	188	191	rVB6	6497	7904	1.56%	0.216%
6	7.096	191	198	202	rBV10	13689	25688	5.06%	0.703%
7	7.123	202	203	208	rVB5	7566	9170	1.80%	0.251%
8	7.160	208	210	213	rBV4	8462	8256	1.62%	0.226%
9	7.214	213	220	225	rVV2	66825	66784	13.14%	1.827%
10	7.256	225	228	231	rVB5	10104	9846	1.94%	0.269%
11	7.337	239	243	245	rVB4	7175	8690	1.71%	0.238%
12	7.353	245	246	250	rBV4	8850	8775	1.73%	0.240%
13	7.401	250	255	258	rBV5	7701	9052	1.78%	0.248%
14	7.449	263	264	269	rBV5	12265	9267	1.82%	0.253%
15	7.540	277	281	285	rBV7	16689	23078	4.54%	0.631%
16	7.625	294	297	299	rBV4	7929	8714	1.72%	0.238%
17	7.684	305	308	312	rBV5	11639	9728	1.91%	0.266%
18	7.770	321	324	325	rBV3	9200	8368	1.65%	0.229%
19	7.797	325	329	333	rVB5	34949	37329	7.35%	1.021%
20	7.834	333	336	340	rVB6	11921	12946	2.55%	0.354%
21	7.871	340	343	346	rBV3	28700	27278	5.37%	0.746%
22	7.925	350	353	360	rVB9	13831	14613	2.88%	0.400%
23	8.059	373	378	380	rBV6	11811	13518	2.66%	0.370%
24	8.150	393	395	399	rVV5	6268	8171	1.61%	0.224%
25	8.208	399	406	411	rVB10	24478	38867	7.65%	1.063%
26	8.251	411	414	415	rBV3	14243	9395	1.85%	0.257%
27	8.267	415	417	420	rBV3	13638	14606	2.87%	0.400%
28	8.321	425	427	429	rVB3	13802	10072	1.98%	0.276%
29	8.358	431	434	437	rBV5	17887	17779	3.50%	0.486%
30	8.406	439	443	444	rBV4	7849	8696	1.71%	0.238%
31	8.460	449	453	457	rVB6	20046	24969	4.91%	0.683%
32	8.503	457	461	463	rBV5	12040	14275	2.81%	0.390%
33	8.604	477	480	482	rBV4	19976	14065	2.77%	0.385%
34	8.626	482	484	487	rVB4	9585	7770	1.53%	0.213%
35	8.727	502	503	506	rVB3	12124	8760	1.72%	0.240%
36	8.765	506	510	516	rBV9	10300	17127	3.37%	0.468%
37	8.807	516	518	520	rBV3	9100	8599	1.69%	0.235%
38	8.957	544	546	550	rVV5	5135	7616	1.50%	0.208%
39	8.995	550	553	559	rVB5	28231	36748	7.23%	1.005%
40	9.075	566	568	572	rVB5	13399	9563	1.88%	0.262%

AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:33 2025 1

(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	9.128	572	578	579	rBV6	11039	13982	2.75%	0.382%
42	9.187	587	589	591	rBV3	11235	11282	2.22%	0.309%
43	9.230	593	597	602	rVV3	49624	56644	11.15%	1.549%
44	9.289	606	608	610	rVB3	11319	8230	1.62%	0.225%
45	9.342	611	618	620	rVV	413169	320879	63.16%	8.777%
46	9.369	620	623	626	rVV	440186	313935	61.79%	8.587%
47	9.396	627	628	634	rVB5	29092	30870	6.08%	0.844%
48	9.449	634	638	640	rBV4	10036	10677	2.10%	0.292%
49	9.508	645	649	650	rVV	287587	228356	44.95%	6.246%
50	9.524	650	652	654	rVV	623823	508062	100.00%	13.897%
51	9.546	655	656	664	rVV	567971	339080	66.74%	9.275%
52	9.599	664	666	670	rVB5	10201	10414	2.05%	0.285%
53	9.652	670	676	683	rVB5	27799	47513	9.35%	1.300%
54	9.722	686	689	691	rBV4	12252	11509	2.27%	0.315%
55	9.749	691	694	696	rVB4	11719	12963	2.55%	0.355%
56	9.792	699	702	706	rVB5	12985	11985	2.36%	0.328%
57	9.818	706	707	711	rVB3	10701	10085	1.98%	0.276%
58	9.866	712	716	718	rBV5	9186	8815	1.74%	0.241%
59	9.899	718	722	725	rBV5	27521	24717	4.86%	0.676%
60	9.941	725	730	732	rVB6	15622	17307	3.41%	0.473%
61	9.963	732	734	742	rBV9	14310	32764	6.45%	0.896%
62	10.016	742	744	746	rBV3	13956	10326	2.03%	0.282%
63	10.075	753	755	760	rBV6	8660	10603	2.09%	0.290%
64	10.118	760	763	767	rVB5	12162	14898	2.93%	0.408%
65	10.161	769	771	775	rVB5	16245	21228	4.18%	0.581%
66	10.209	778	780	784	rBV4	10665	11342	2.23%	0.310%
67	10.246	784	787	789	rBV	52672	44997	8.86%	1.231%
68	10.268	790	791	795	rVB4	21036	18084	3.56%	0.495%
69	10.375	809	811	814	rBV4	13885	16926	3.33%	0.463%
70	10.401	814	816	819	rVB4	12247	14035	2.76%	0.384%
71	10.519	831	838	844	rBV4	13850	34973	6.88%	0.957%
72	10.594	849	852	857	rVB7	28696	31494	6.20%	0.861%
73	10.642	859	861	863	rBV3	9433	11029	2.17%	0.302%
74	10.669	863	866	869	rVB5	16973	15677	3.09%	0.429%
75	10.706	869	873	874	rBV4	10837	13181	2.59%	0.361%
76	10.776	880	886	888	rBV7	13201	21904	4.31%	0.599%
77	10.835	894	897	900	rBV4	13256	14660	2.89%	0.401%
78	10.888	904	907	910	rBV5	20149	16649	3.28%	0.455%
79	11.006	922	929	931	rBV8	15756	26942	5.30%	0.737%
80	11.048	935	937	944	rVB8	22032	39658	7.81%	1.085%
81	11.097	944	946	948	rBV3	17644	13487	2.65%	0.369%
82	11.171	956	960	964	rBV7	28296	32382	6.37%	0.886%
83	11.209	964	967	968	rBV3	9345	8198	1.61%	0.224%
84	11.305	983	985	988	rVB4	10545	9149	1.80%	0.250%
85	11.353	988	994	998	rBV9	10886	23137	4.55%	0.633%

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(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	11.450	1009	1012	1018	rBV6	51761	56012	11.02%	1.532%
87	11.492	1018	1020	1025	rBV5	12913	19745	3.89%	0.540%
88	11.557	1031	1032	1038	rBV6	18898	21983	4.33%	0.601%
89	11.599	1038	1040	1042	rVV3	12379	8310	1.64%	0.227%
90	11.712	1058	1061	1068	rBV6	70762	90386	17.79%	2.472%
91	11.872	1090	1091	1096	rVB5	32169	20933	4.12%	0.573%
92	11.910	1096	1098	1100	rBV2	17581	12729	2.51%	0.348%
93	11.974	1106	1110	1116	rVB5	59267	72276	14.23%	1.977%
94	12.022	1116	1119	1121	rBV4	25429	26776	5.27%	0.732%
95	12.193	1149	1151	1154	rBV4	27662	24057	4.74%	0.658%
96	12.225	1154	1157	1162	rBV6	40532	52014	10.24%	1.423%
97	12.535	1213	1215	1217	rBV3	24649	19386	3.82%	0.530%
98	12.717	1247	1249	1253	rBV5	46195	28169	5.54%	0.771%
99	12.749	1253	1255	1260	rVB6	36560	33833	6.66%	0.925%
100	13.889	1466	1468	1471	rBV4	36840	41021	8.07%	1.122%

Sum of corrected areas: 3655805

Appendix C. Tier 1 Analysis Tech Memos

LSC Report - Integrated Chromatogram

```
Data Path : C:\Users\(b) (6)          \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On    : 31 Dec 2024    8:24 am
Operator  : (b) (6)
Sample    : OP60630-MB
Misc      : op60630,e3e5885,1,,,1,1
ALS Vial  : 1   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P
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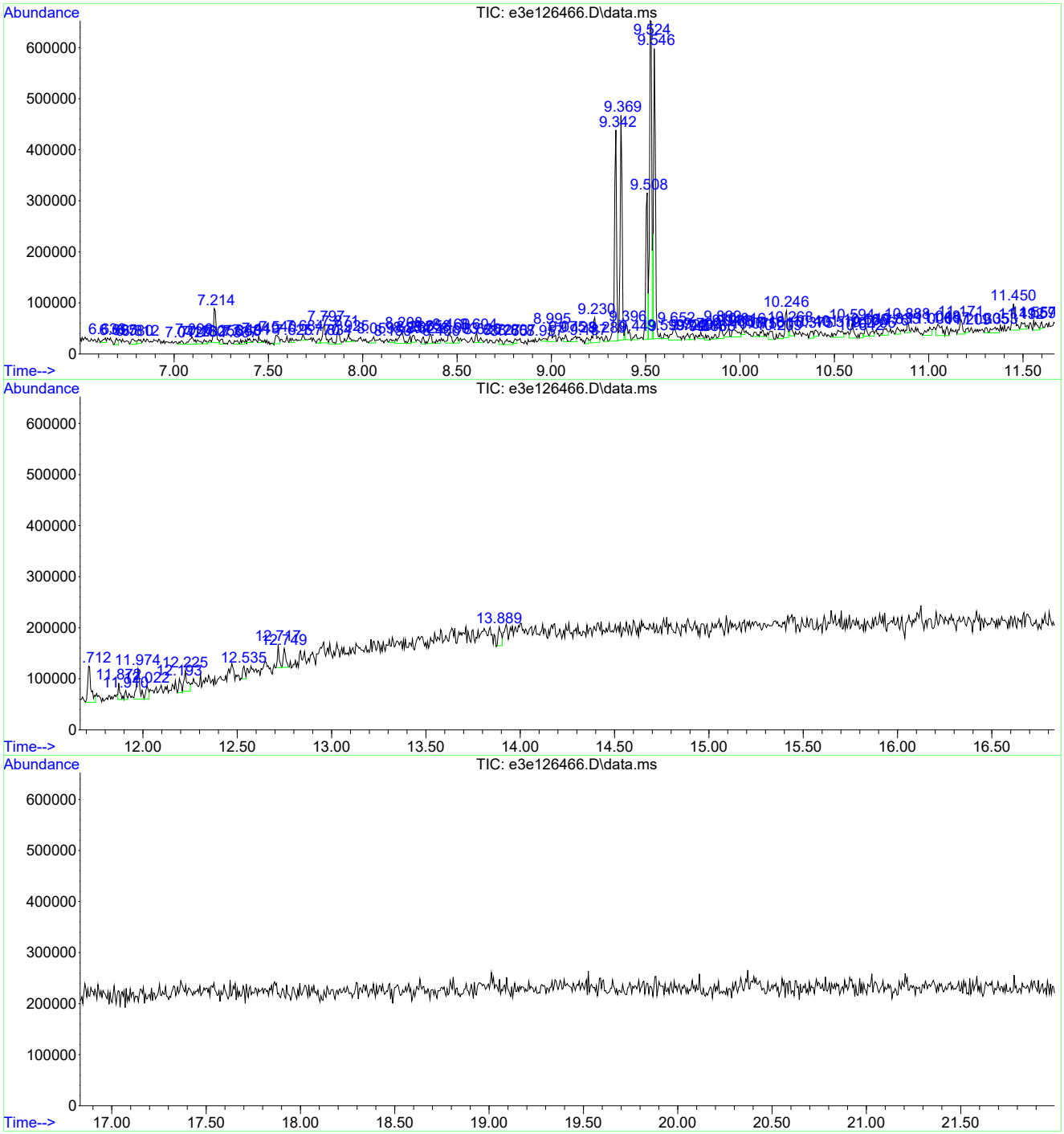


Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

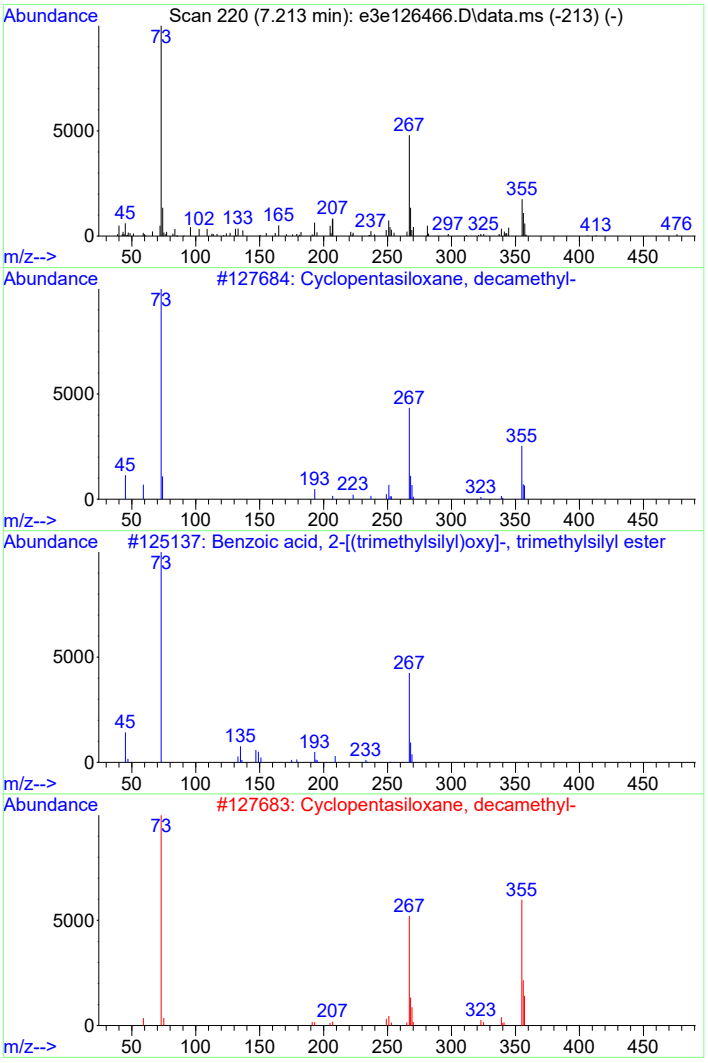
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

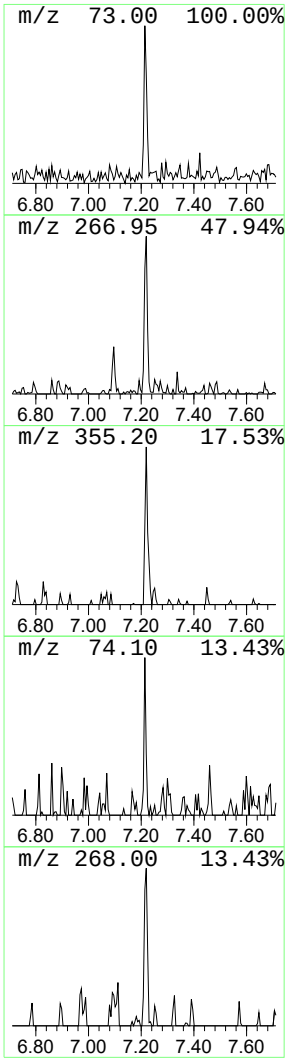
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 9 Cyclopentasiloxane, decamet... Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.213	0.00	66784	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	59
2	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	47
3	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	43
4	Benzoic acid, 4-[(trimethylsilyl...	282	C13H22O3Si2	002078-13-9	38
5	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	28





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:35 2025 5

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

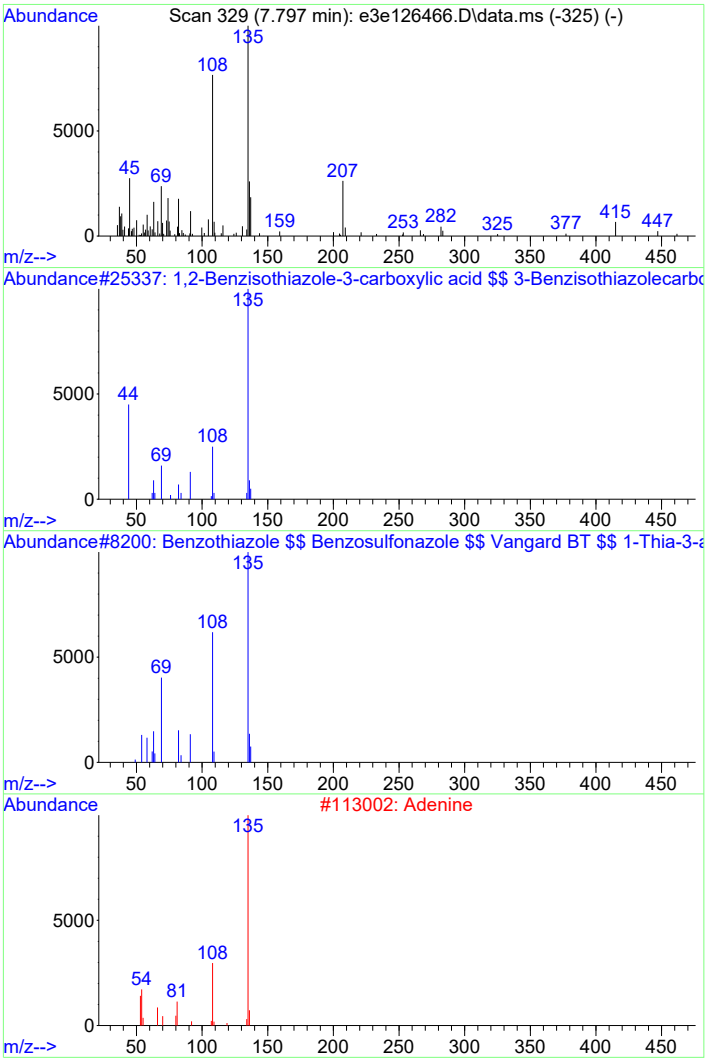
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

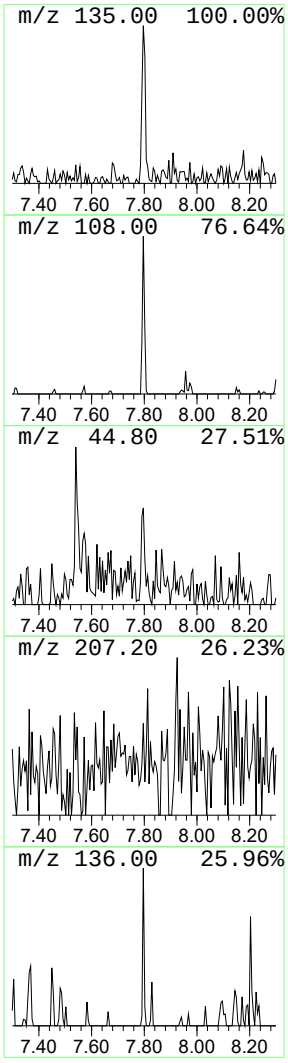
****

Peak Number 19 1,2-Benzisothiazole-3-carbo... Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.797	0.00	37329	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,2-Benzisothiazole-3-carboxylic...	179	C8H5NO2S	040991-34-2	59
2	Benzothiazole $$ Benzosulfonazol...	135	C7H5NS	000095-16-9	50
3	Adenine	135	C5H5N5	000073-24-5	45
4	9H-Purin-6-amine, 9-(2-deoxy-.al...	251	C10H13N5O3	003413-66-9	38
5	1,2-Benzisothiazole $$ Benzo[d]i...	135	C7H5NS	000272-16-2	35





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

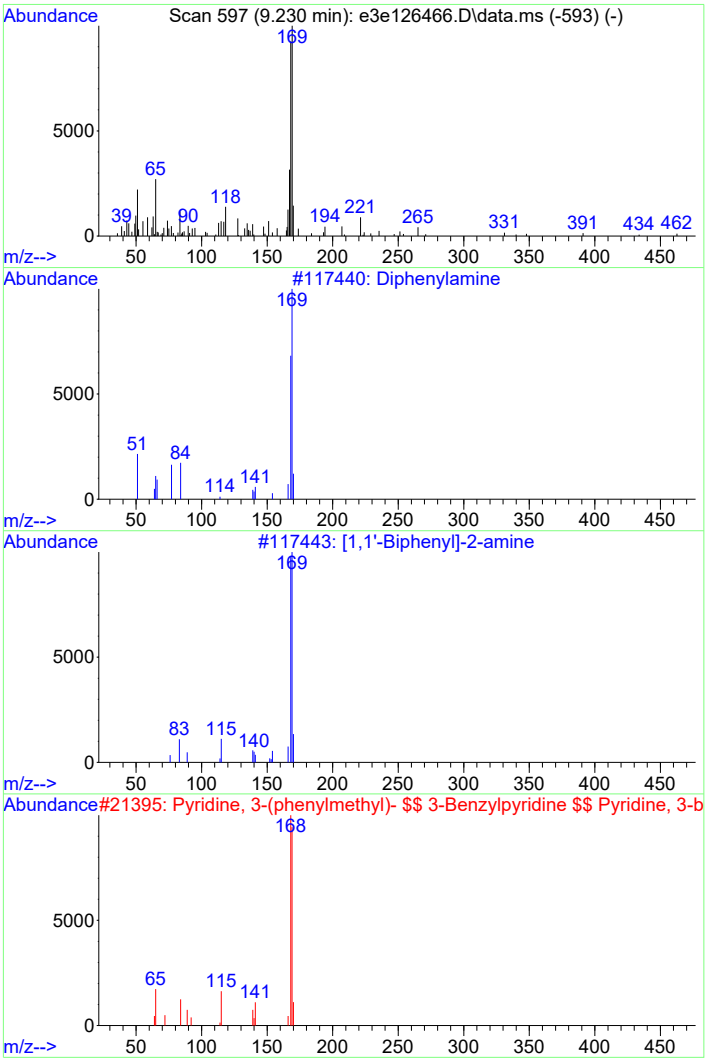
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

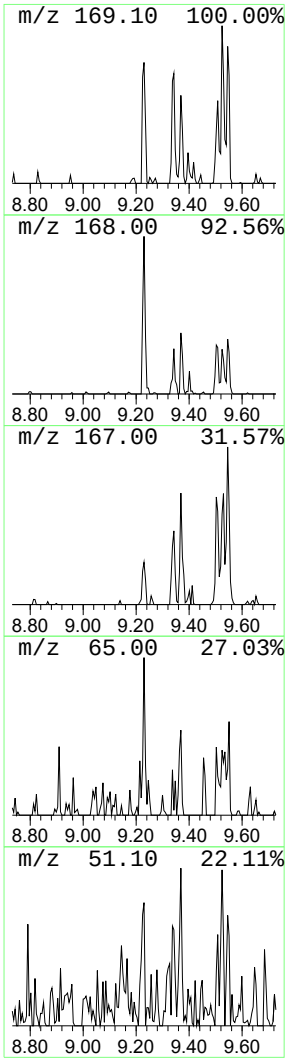
****

Peak Number 41 Diphenylamine Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.230	0.00	56644	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diphenylamine	169	C12H11N	000122-39-4	72
2	[1,1'-Biphenyl]-2-amine	169	C12H11N	000090-41-5	64
3	Pyridine, 3-(phenylmethyl)- $$ 3...	169	C12H11N	000620-95-1	59
4	Pyridine, 3-(phenylmethyl)-	169	C12H11N	000620-95-1	59
5	Pyridine, 4-(phenylmethyl)-	169	C12H11N	002116-65-6	59





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

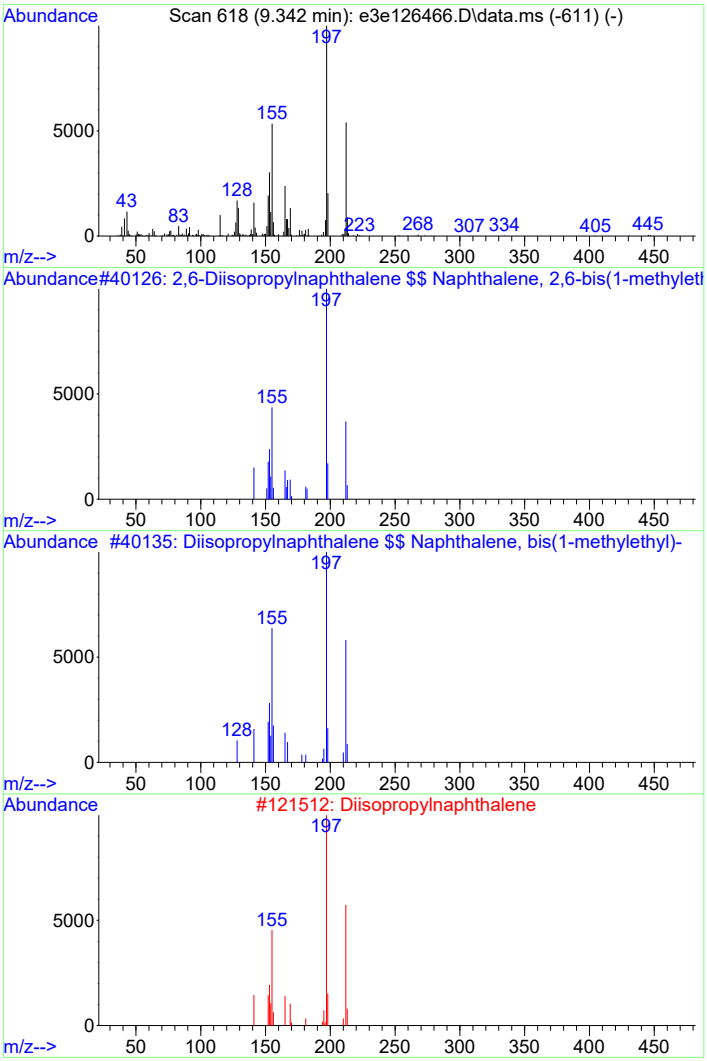
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

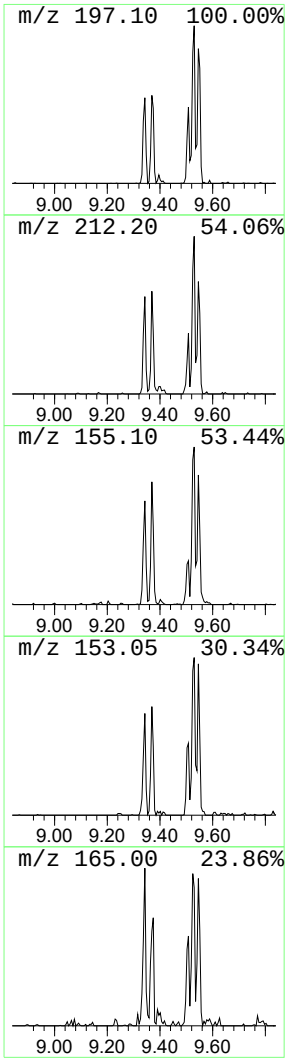
****

Peak Number 43 Diisopropylnaphthalene Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.342	0.00	320879	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	94
2	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	91
3	Diisopropylnaphthalene	212	C16H20	038640-62-9	81
4	Phenol, 4-(1-methyl-1-phenylethy...	212	C15H16O	000599-64-4	47
5	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	46





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:38 2025 8

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

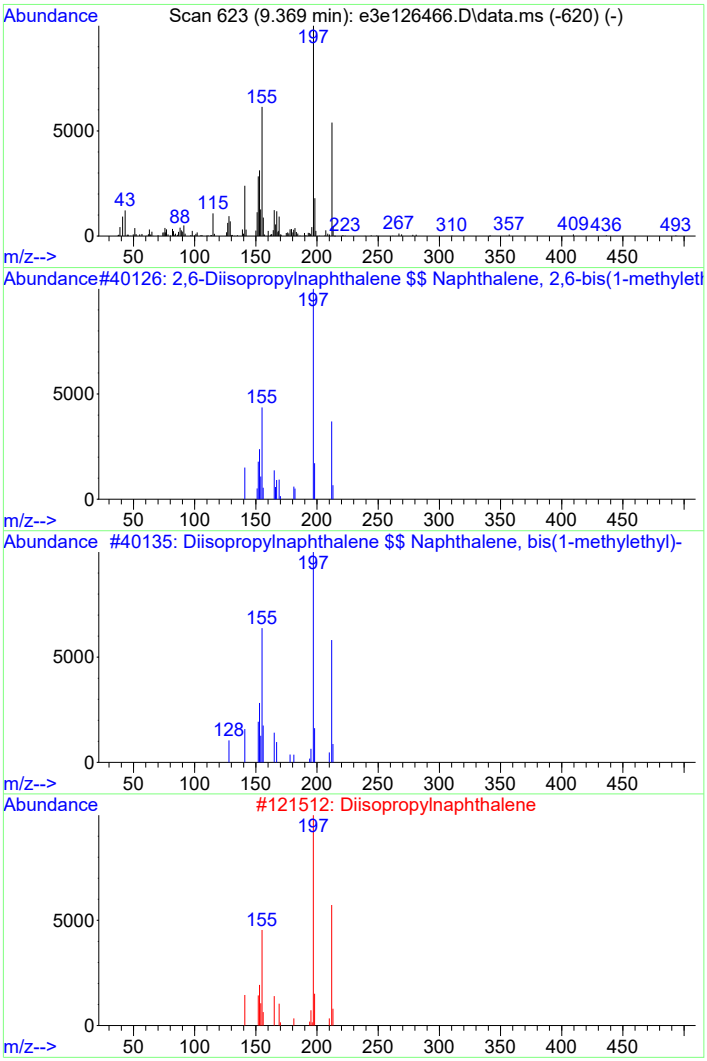
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

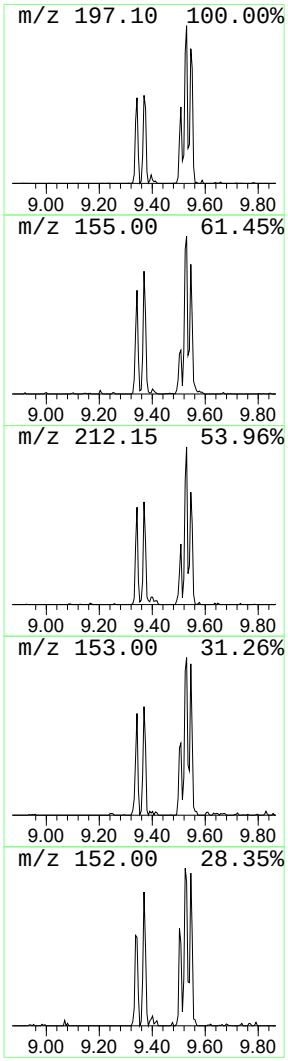
****

Peak Number 44 Diisopropylnaphthalene Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.369	0.00	313935	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	95
2	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	93
3	Diisopropylnaphthalene	212	C16H20	038640-62-9	81
4	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	43
5	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	43





(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

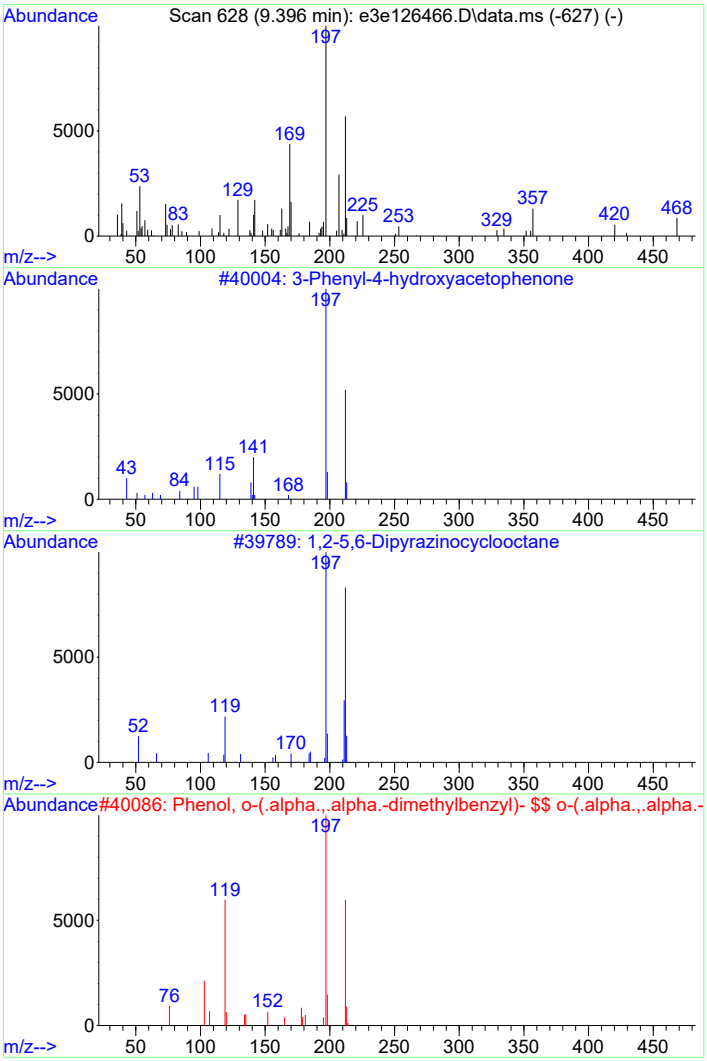
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

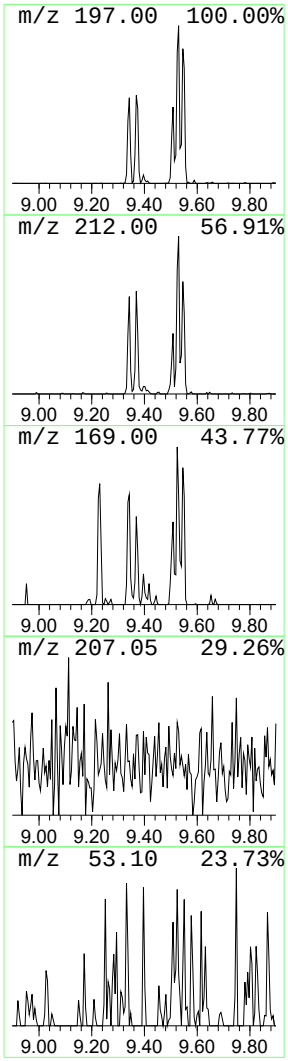
****

Peak Number 45 3-Phenyl-4-hydroxyacetophenone Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.396	0.00	30870	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	43
2	1,2-5,6-Dipyrazinocyclooctane	212	C12H12N4	099319-21-8	43
3	Phenol, o-(.alpha.,.alpha.-dimet...	212	C15H16O	018168-40-6	43
4	Diisopropylnaphthalene	212	C16H20	038640-62-9	43
5	Phenol, 4-(1-methyl-1-phenylethy...	212	C15H16O	000599-64-4	37





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:39 2025 10

(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

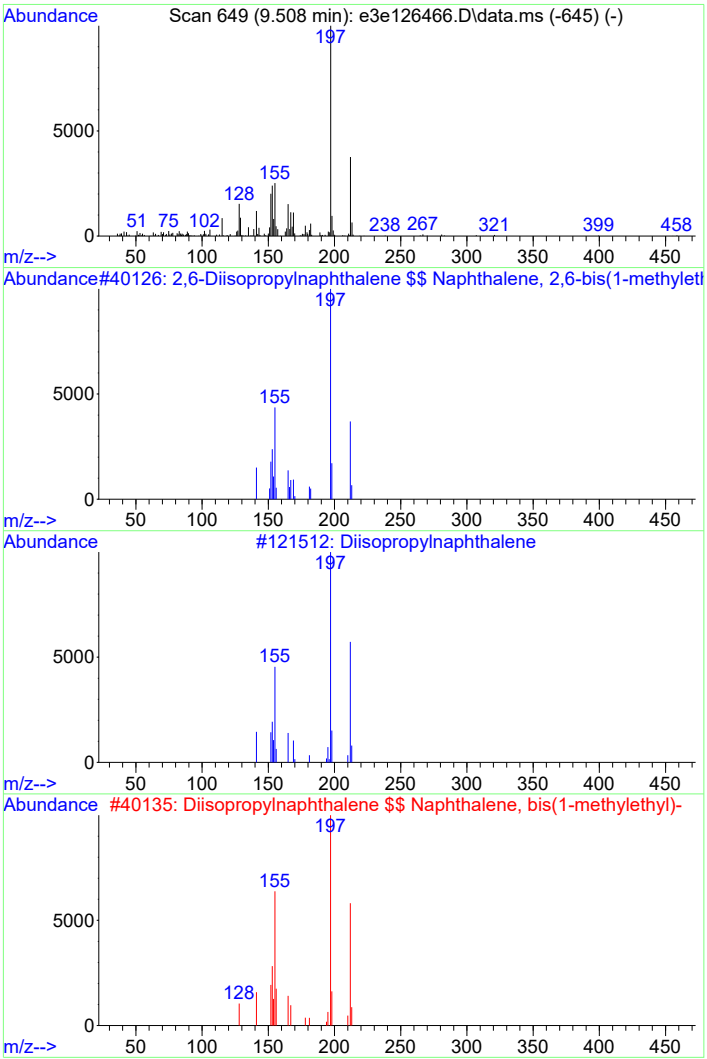
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

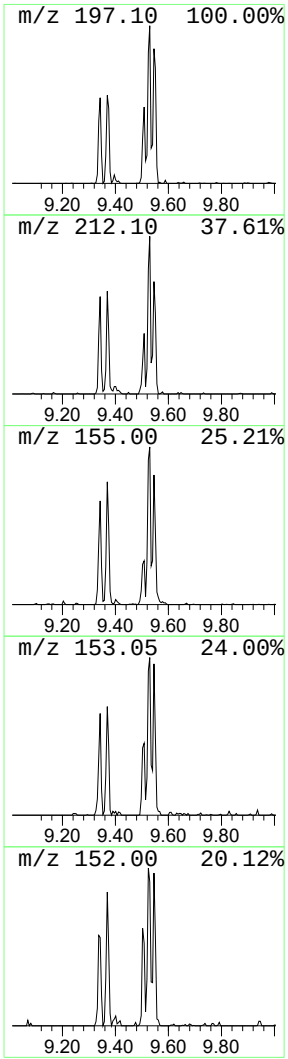
****

Peak Number 47 Diisopropylnaphthalene Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.508	0.00	228356	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	87
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	78
3	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	46
4	Phenol, 4-(1-methyl-1-phenylethy...	212	C15H16O	000599-64-4	43
5	1,2-5,6-Dipyrazinocyclooctane	212	C12H12N4	099319-21-8	43





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:40 2025 11

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

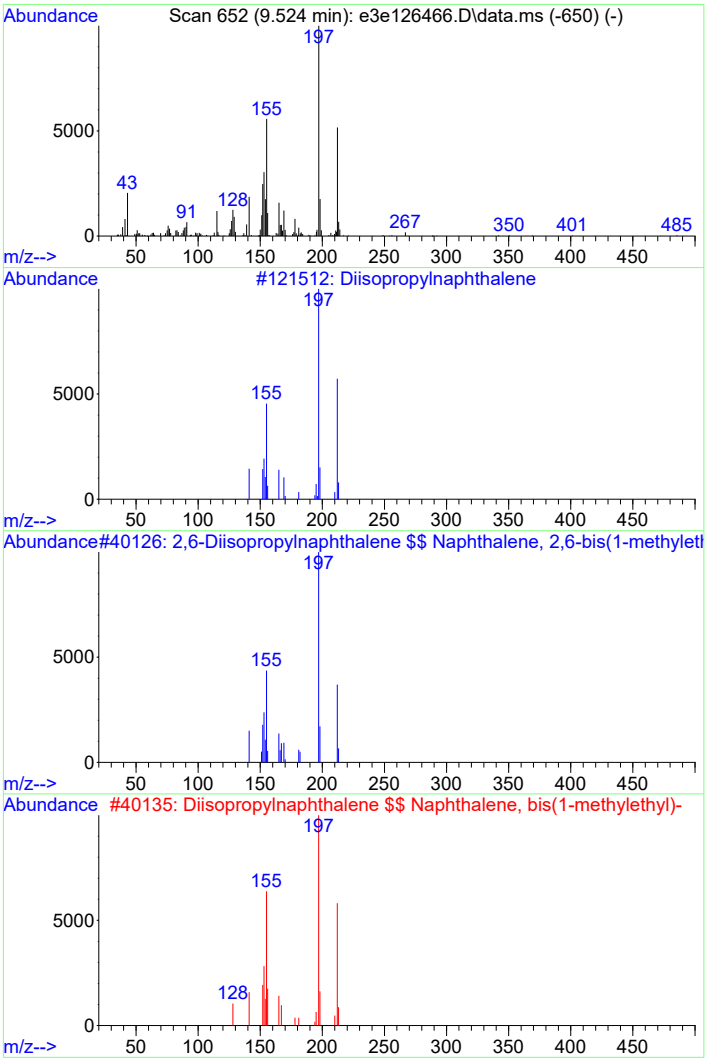
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

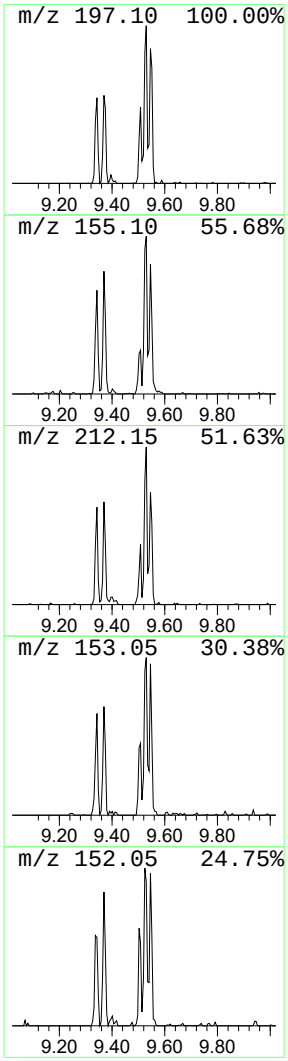
****

Peak Number 48 Diisopropylnaphthalene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.524	0.00	508062	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diisopropylnaphthalene	212	C16H20	038640-62-9	95
2	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	94
3	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	90
4	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	45
5	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	43





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:41 2025 2

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

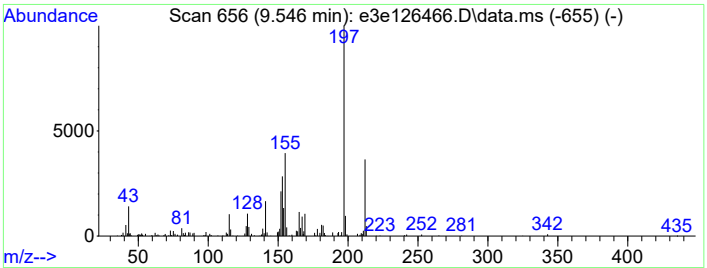
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

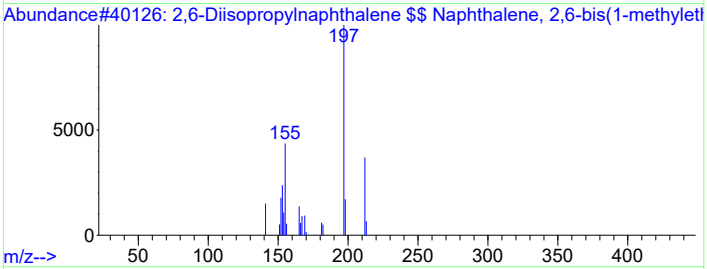
****

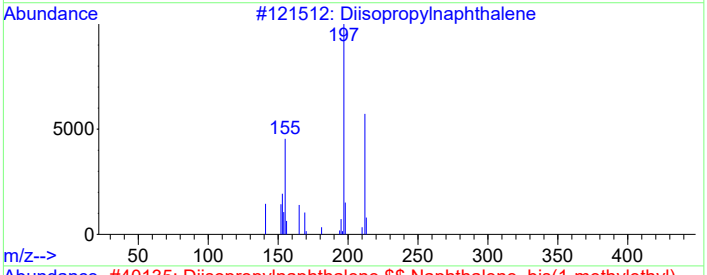
Peak Number 49 Diisopropylnaphthalene Concentration Rank 2

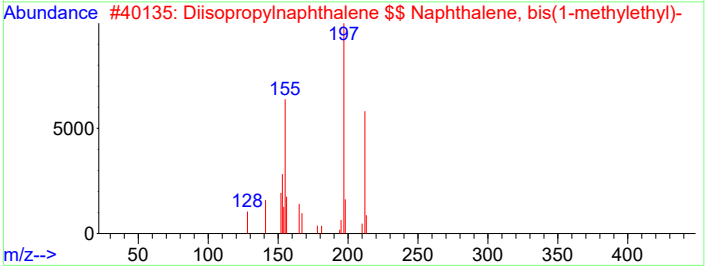
R.T.	EstConc	Area	Relative to ISTD	R.T.
9.546	0.00	339080	External Standard	0.000

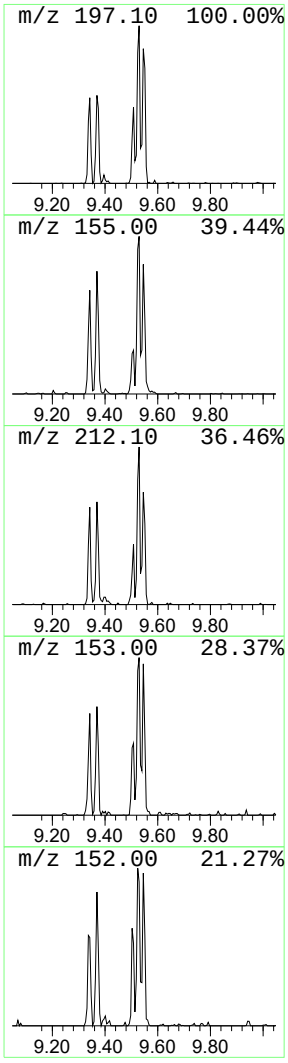
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	83
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	64
3	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	64
4	Benzaldehyde, 4-hydroxy-3-methox...	197	C8H7NO5	006635-20-7	42
5	1H-Benz[de]isoquinoline-1,3(2H)-...	197	C12H7NO2	000081-83-4	38











AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:42 2025 13

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data Path : C:\Users\(b) (6)          \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On    : 31 Dec 2024    8:24 am
Operator  : (b) (6)
Sample    : OP60630-MB
Misc      : op60630,e3e5885,1,,,1,1
ALS Vial  : 1   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

**********************************************************************
Peak Number 65  1,2-Benzenedicarboxylic aci...  Concentration Rank  9
```
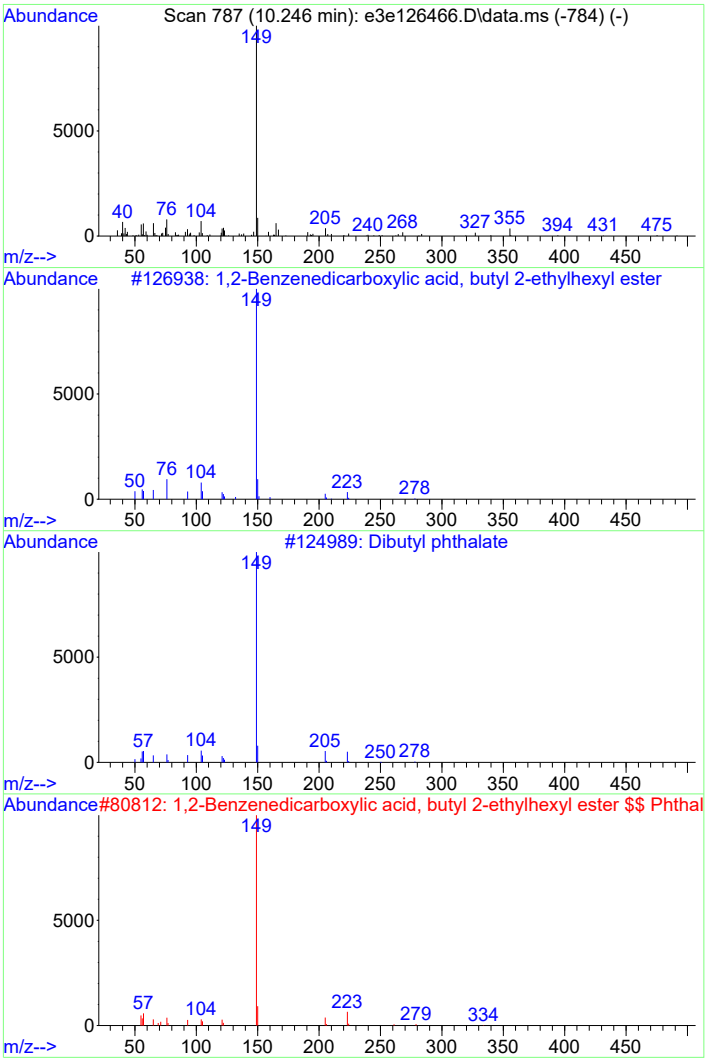
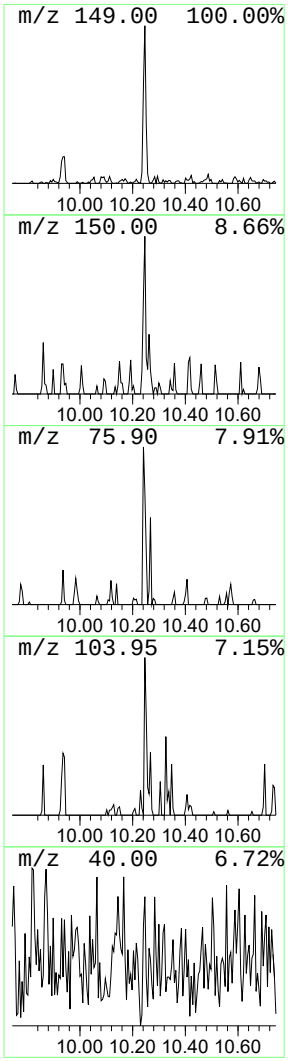

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.246	0.00	44997	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,2-Benzenedicarboxylic acid, bu...	334	C20H30O4	000085-69-8	72
2	Dibutyl phthalate	278	C16H22O4	000084-74-2	64
3	1,2-Benzenedicarboxylic acid, bu...	334	C20H30O4	000085-69-8	64
4	1,2-Benzenedicarboxylic acid, bu...	304	C18H24O4	000084-64-0	64
5	Dibutyl phthalate $$ 1,2-Benzene...	278	C16H22O4	000084-74-2	64





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:43 2025 : 14

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

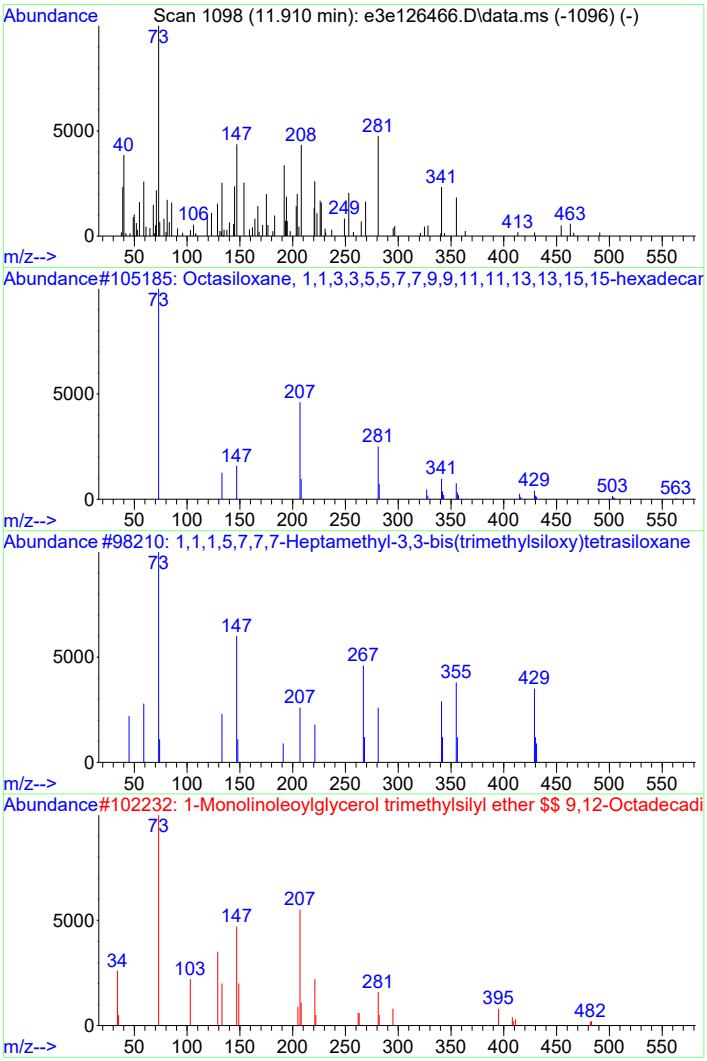
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

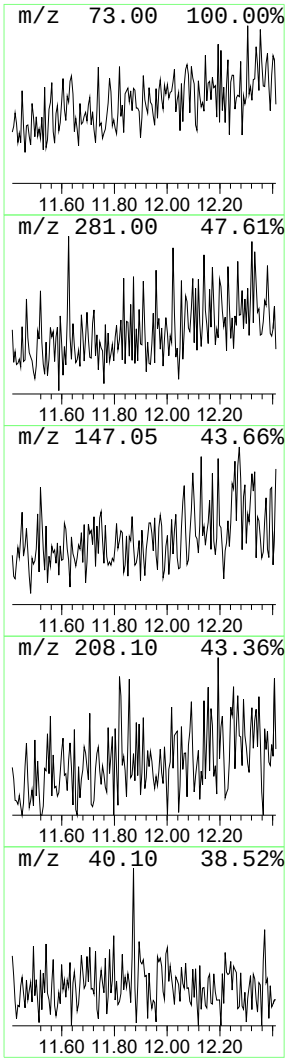
****

Peak Number 85 Siloxane Concentration Rank 49

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.910	0.00	12729	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	37
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	10
3	1-Monolinoleoylglycerol trimethy...	498	C27H54O4Si2	054284-45-6	10
4	3-Isopropoxy-1,1,1,5,5,5-hexamet...	354	C12H34O4Si4	072182-11-7	9
5	Silanamine, N-[2,6-dimethyl-4-[(...	281	C14H27NOSi2	072088-09-6	4





AECOM_e3g_TPHEXT.M Wed Jan 01 07:37:44 2025 Page: 15

(b) (4)

DA69622T

7.2.1

7

Appendix C. Tier 1 Analysis Tech Memos

Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126466.D
Acq On : 31 Dec 2024 8:24 am
Operator : (b) (6)
Sample : OP60630-MB
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Cyclopentasilox...	7.213	0.0		66784	0	0.000	1	1.0
1,2-Benzisothia...	7.797	0.0		37329	0	0.000	1	1.0
Diphenylamine	9.230	0.0		56644	0	0.000	1	1.0
Diisopropylnaph...	9.342	0.0		320879	0	0.000	1	1.0
Diisopropylnaph...	9.369	0.0		313935	0	0.000	1	1.0
3-Phenyl-4-hydr...	9.396	0.0		30870	0	0.000	1	1.0
Diisopropylnaph...	9.508	0.0		228356	0	0.000	1	1.0
Diisopropylnaph...	9.524	0.0		508062	0	0.000	1	1.0
Diisopropylnaph...	9.546	0.0		339080	0	0.000	1	1.0
1,2-Benzenedica...	10.246	0.0		44997	0	0.000	1	1.0
Siloxane	11.910	0.0		12729	0	0.000	1	1.0

Manual Integration Approval Summary

Sample Number:	OP60630-MB1	**Method:**	SW846 8270E
Lab FileID:	E3E126466.D	**Analyst approved:**	01/01/25 09:55 (b) (6)
Injection Time:	12/31/24 08:24	**Supervisor approved:**	01/01/25 10:00 (b) (6)

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dichlorobenzene-d4	3855-82-1		6.04	Poor instrument integration

Appendix C. Tier 1 Analysis Tech Memos

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 01 06:34:21 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	10.121	230	29463984m	29463984.00		0.00
Target Compounds						Qvalue
1) Undecane (C11)	6.997	57	757446m	757446.00		
2) Diethylnaphthalene	8.511	141	13926	13926.00	#	100
3) 1-Methylnaphthalene	8.046	142	18282	18282.00	#	100
4) 1-Ethylpropylbenzene	6.719	91	7756	7756.00	#	100
5) Cyclohexane	6.398	84	6049	6049.00	#	100
6) Tridecane (C13)	7.917	57	241307	241307.00	#	1
7) Dodecane (C12)	7.398	43	300338	300338.00	#	61
8) Sesquiterpanes	7.949	123	259714m	259714.00		
9) Benzocyclohexane	7.463	104	119484m	119484.00		
10) Propylbutylbenzene	8.120	176	58237m	58237.00		
11) Cyclic Isoprenoid	6.655	113	187917m	187917.00		
12) Trimethylbenzene	6.591	105	73478	73478.00	#	100
13) Saturated Hydrocarbons	7.917	85	1459881m	1459881.00 ug/l		
14) Alkylated Benzenes	6.585	78	23322m	23322.00 ug/l		
15) C3 Alkylated Benzene	6.591	105	207135m	207135.00 ug/l		
16) C4 Alkylated Benzene	6.591	105	243696m	243696.00 ug/l		
17) C5 Alkylated Benzene	7.575	133	456438m	456438.00 ug/l		
18) C6 Alkylated Benzene	7.864	147	12195	12195.00 ug/l	#	100
19) Alkylated Naphthalenes	7.591	128	12171	12171.00 ug/l	#	100
29) n-Alkane	7.917	57	5355733m	5355733.00		
32) n-Decane (C10)	6.553	57	218131	218131.00	#	50
33) n-Dodecane (C12)	7.521	57	903236m	903236.00		
34) n-Tetradecane (C14)	8.286	57	198967	198967.00	#	77
35) n-Hexadecane (C16)	8.987	57	38399	38399.00	#	71
36) n-Octadecane (C18)	9.650	57	24307	24307.00	#	73
37) n-Eicosane (C20)	10.292	57	11770	11770.00	#	60
39) n-Docosane (C22)	10.891	57	13293	13293.00	#	82
41) n-Tetracosane (C24)	11.447	57	55399	55399.00	#	35
42) n-Pentacosane (C25)	11.720	57	23790	23790.00	#	84
43) n-Hexacosane (C26)	11.982	57	33553m	33553.00		
45) n-Octacosane (C28)	12.496	57	60654	60654.00	#	78
47) n-Triacontane (C30)	12.988	57	146554	146554.00	#	80
48) n-Doatriacontane (C32)	13.523	57	187166	187166.00	#	74
49) n-Tetratriacontane (C34)	14.170	57	196020	196020.00	#	79
50) n-Hexatriacontane (C36)	14.988	57	212811	212811.00	#	77
51) n-Octatriacontane (C38)	16.069	57	219332	219332.00	#	80
52) n-Tetracontane (C40)	17.561	57	271494	271494.00		88
53) Siloxane	7.869	429	23604m	23604.00		
55) Bis(2-ethylhexyl)phtha...	10.249	149	60339	60339.00	#	50

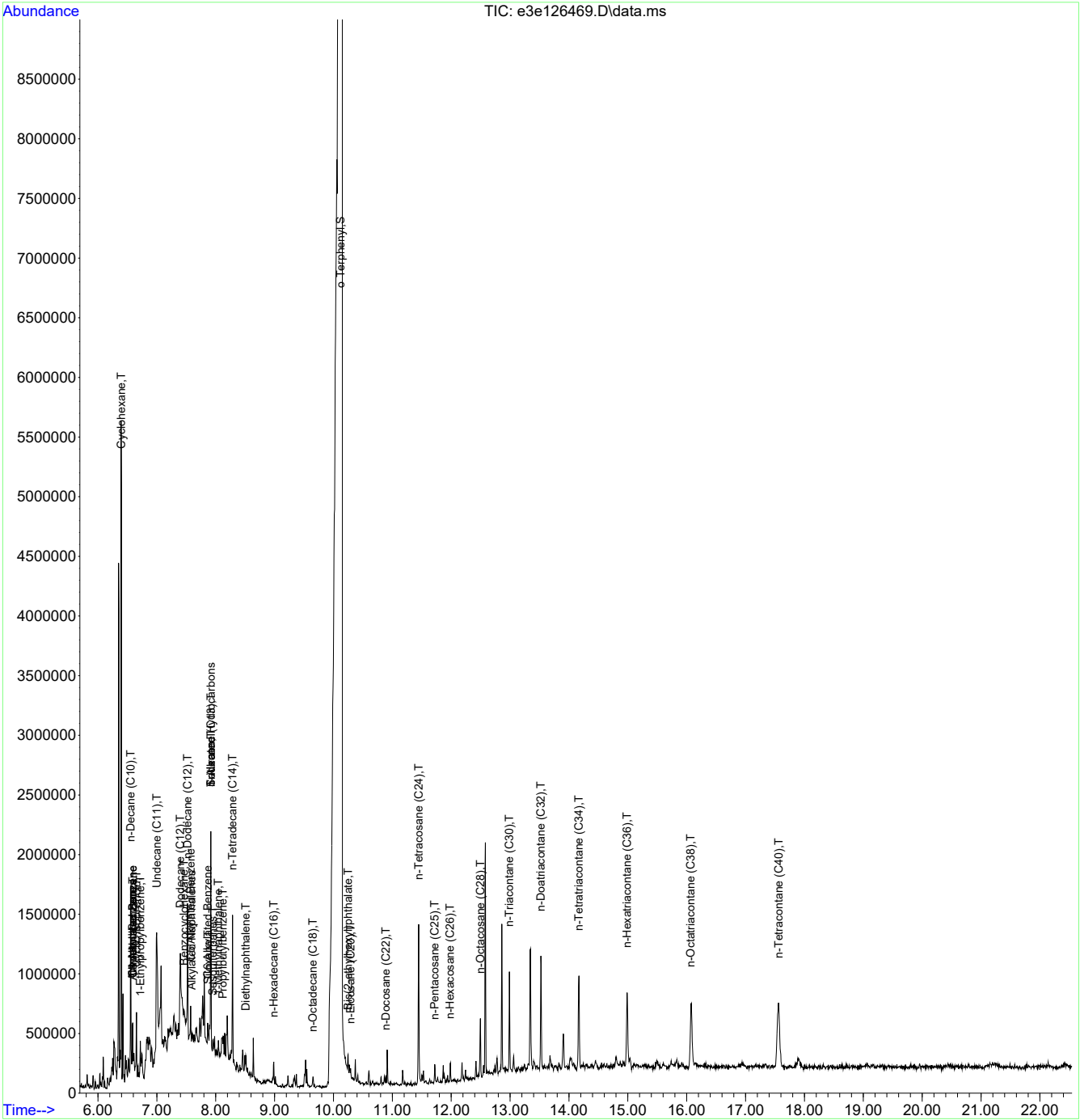
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Appendix C. Tier 1 Analysis Tech Memos

Quantitation Report (QT Reviewed)

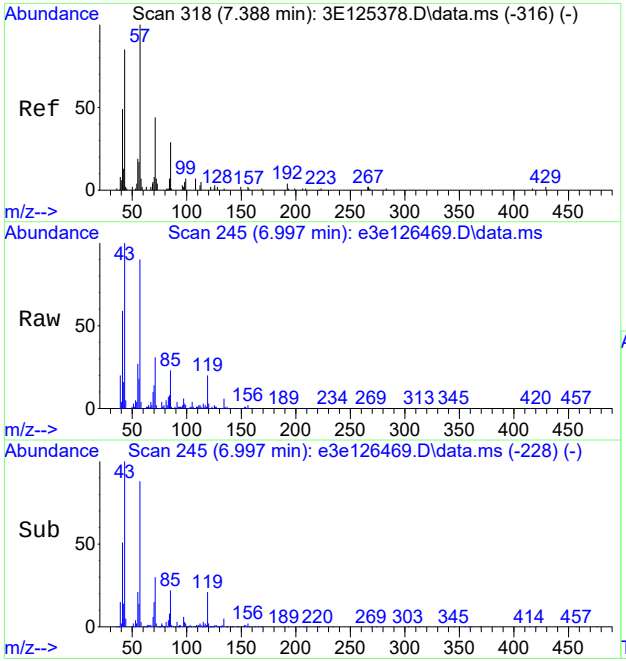
Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 01 06:34:21 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



AECOM_e3g_TPHEXT.M Wed Jan 01 06:46:35 2025 2

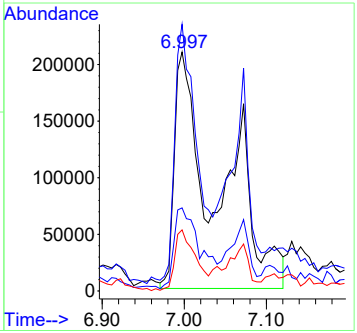
Appendix C. Tier 1 Analysis Tech Memos

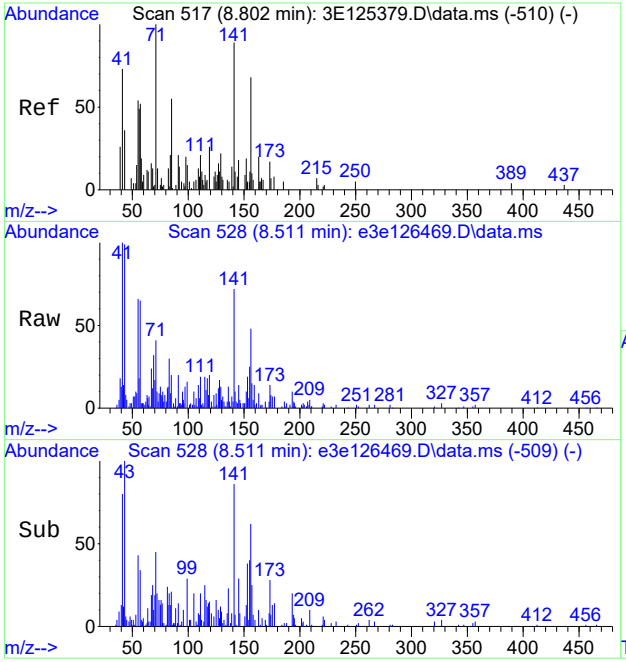


#1
Undecane (C11)
Concen: 757446.00 m
RT: 6.997 min Scan# 245
Delta R.T. -0.011 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 757446

Ion	Ratio	Lower	Upper
57	100		
43	57.6	0.0	35.7#
71	21.1	0.0	26.9
85	12.5	0.0	20.0

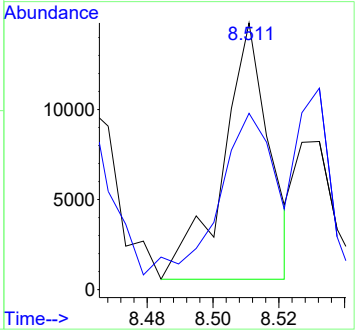




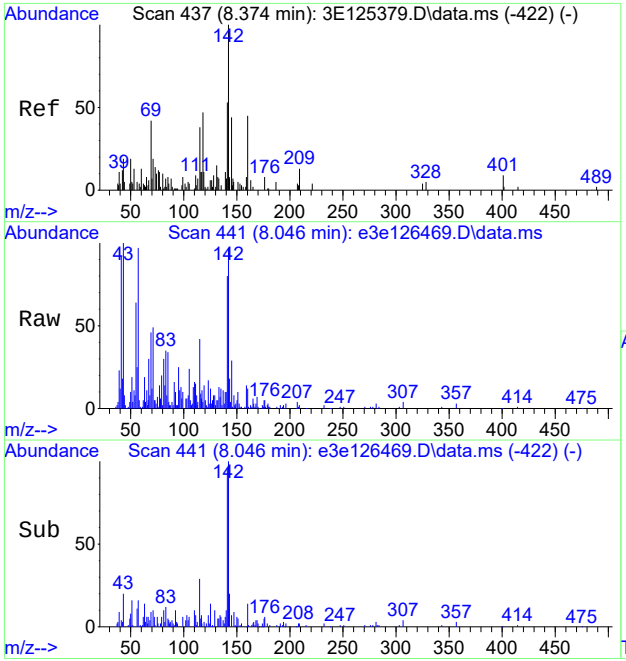
#2
Diethylnaphthalene
Concen: 13926.00
RT: 8.511 min Scan# 528
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:141 Resp: 13926

Ion	Ratio	Lower	Upper
141	100		
156	72.6	0.0	20.0#



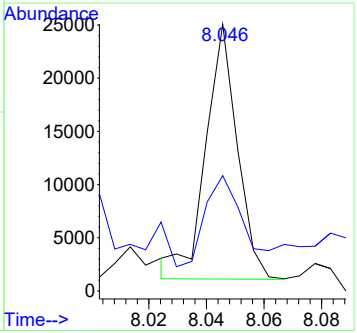
Appendix C. Tier 1 Analysis Tech Memos

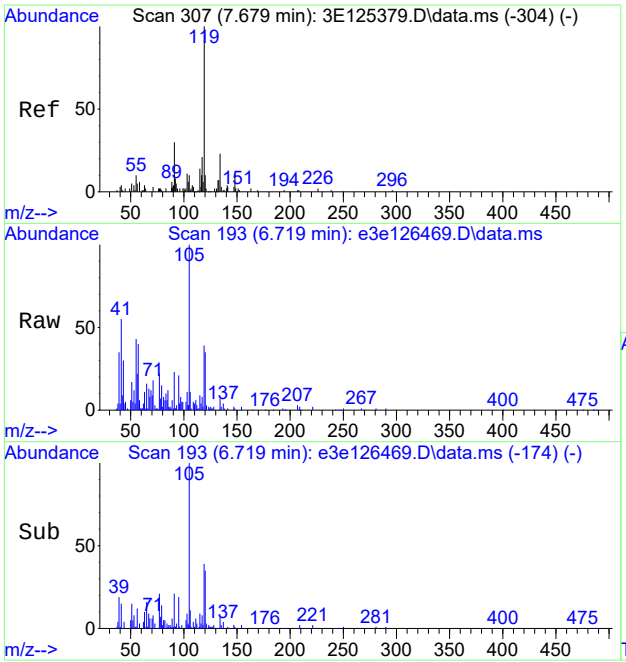


#3
1-Methylnaphthalene
Concen: 18282.00
RT: 8.046 min Scan# 441
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:142 Resp: 18282

Ion	Ratio	Lower	Upper
142	100		
115	42.1	0.0	20.0#

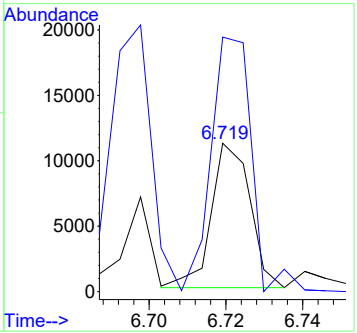




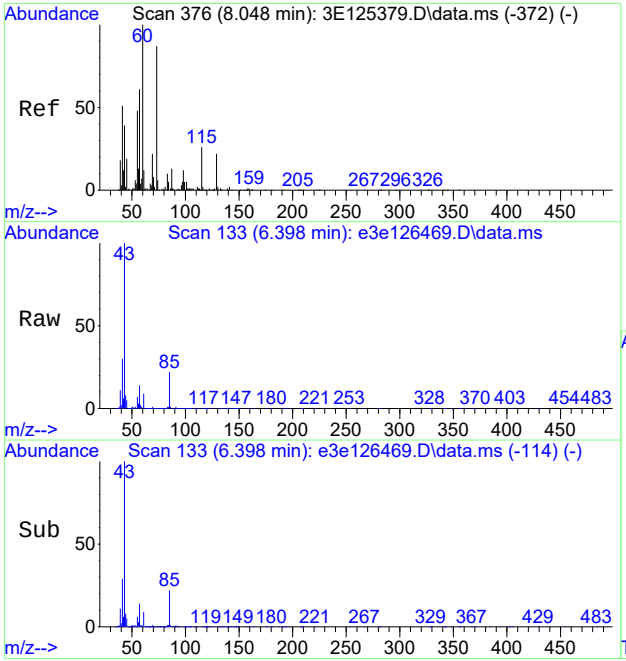
#4
1-Ethylpropylbenzene
Concen: 7756.00
RT: 6.719 min Scan# 193
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 91 Resp: 7756

Ion	Ratio	Lower	Upper
91	100		
119	183.5	0.0	20.0#



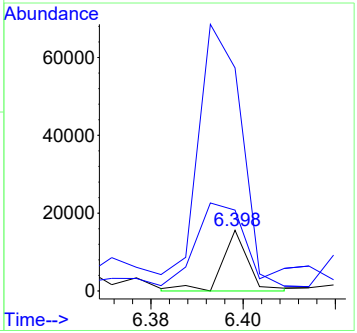
Appendix C. Tier 1 Analysis Tech Memos

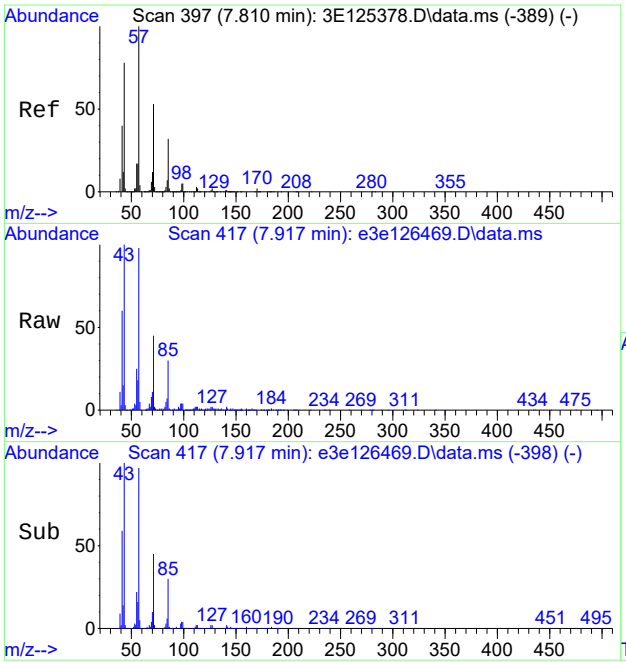


#5
Cyclohexane
Concen: 6049.00
RT: 6.398 min Scan# 133
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 84 Resp: 6049

Ion	Ratio	Lower	Upper
84	100		
56	714.2	0.0	20.0#
69	277.5	0.0	20.0#

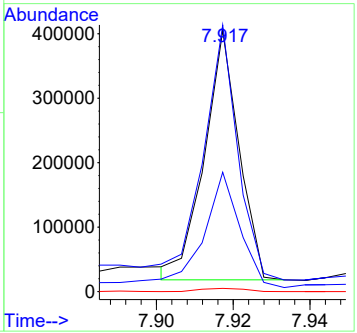




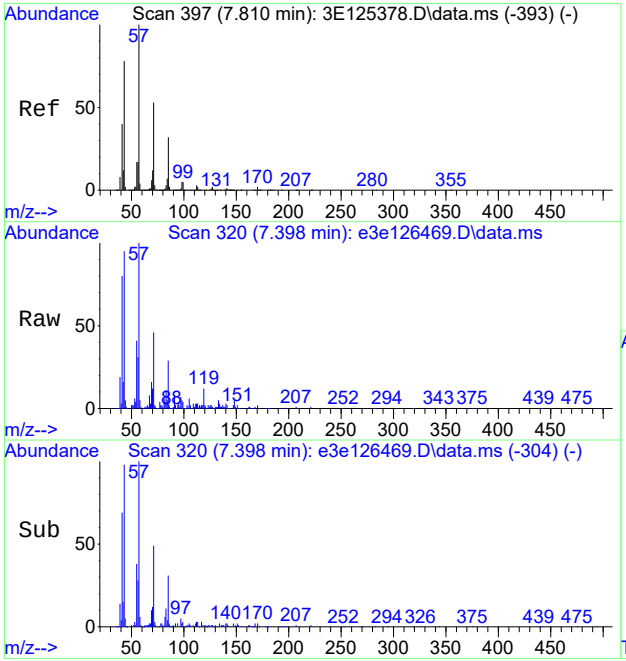
#6
Tridecane (C13)
Concen: 241307.00
RT: 7.917 min Scan# 417
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 241307

Ion	Ratio	Lower	Upper
57	100		
43	100.7	0.0	26.1#
71	51.8	0.0	20.0#
184	1.7	0.0	20.0



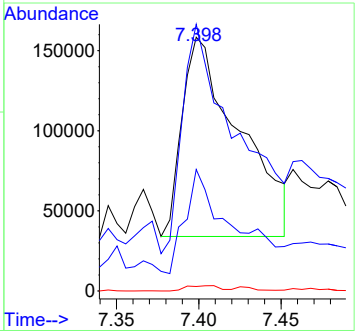
Appendix C. Tier 1 Analysis Tech Memos

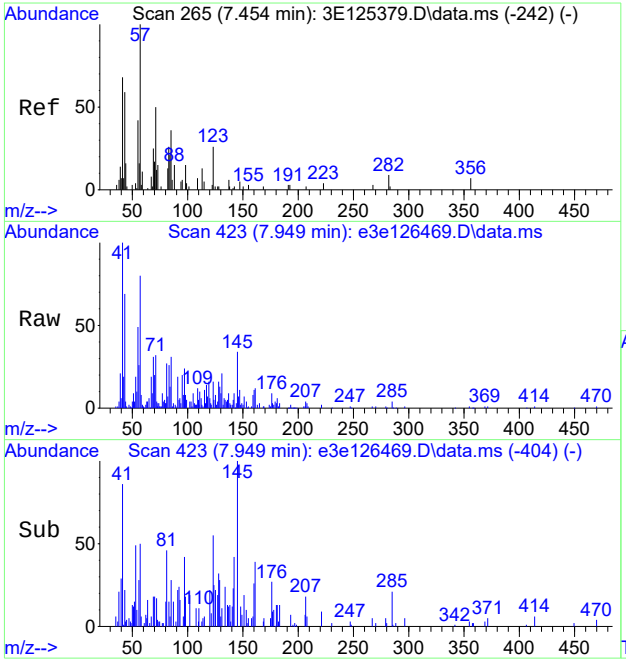


#7
Dodecane (C12)
Concen: 300338.00
RT: 7.398 min Scan# 320
Delta R.T. -0.016 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 43 Resp: 300338

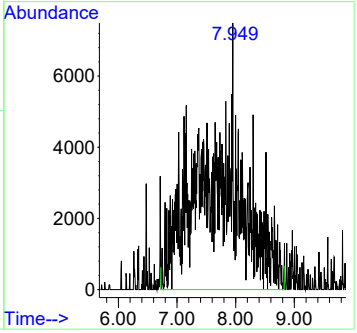
Ion	Ratio	Lower	Upper
43	100		
57	113.6	145.0	185.0#
71	33.7	44.9	84.9#
170	1.6	0.0	20.0



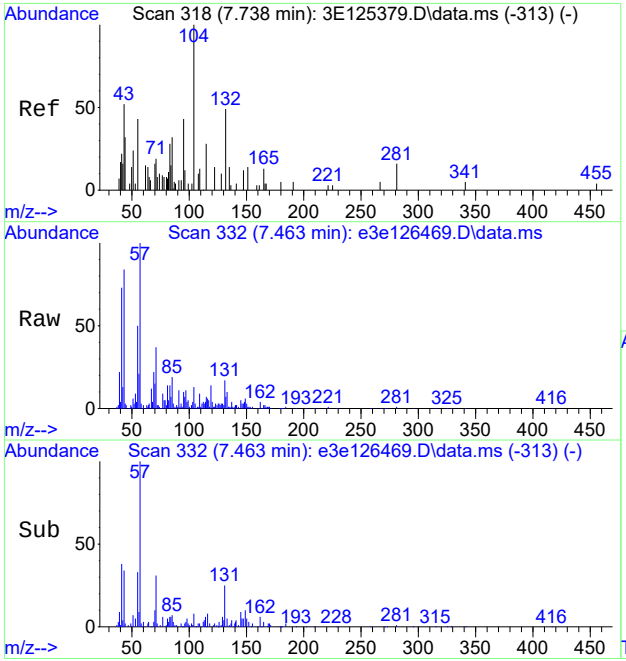


#8
Sesquiterpanes
Concen: 259714.00 m
RT: 7.949 min Scan# 423
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:123 Resp: 259714



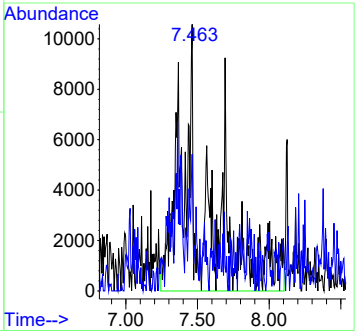
Appendix C. Tier 1 Analysis Tech Memos

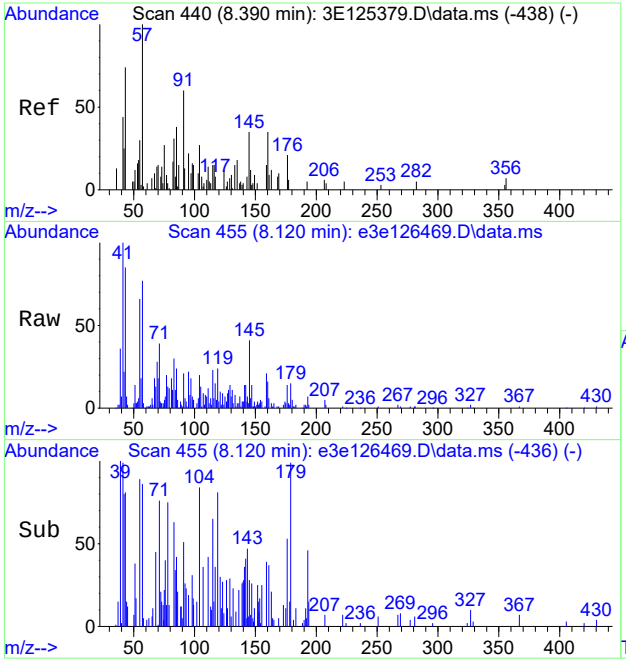


#9
Benzocyclohexane
Concen: 119484.00 m
RT: 7.463 min Scan# 332
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:104 Resp: 119484

Ion	Ratio	Lower	Upper
104	100		
132	3.9	0.0	20.0

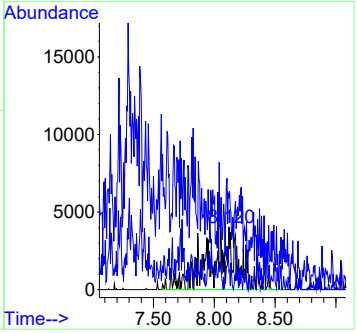




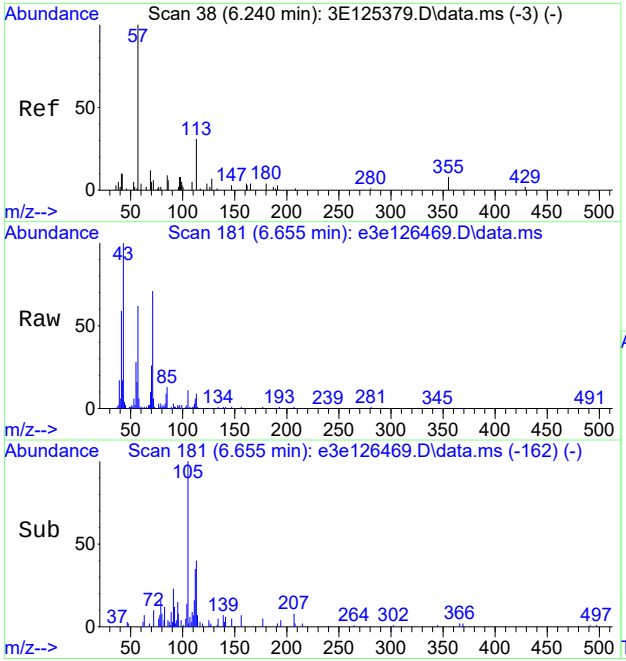
#10
Propylbutylbenzene
Concen: 58237.00 m
RT: 8.120 min Scan# 455
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:176 Resp: 58237

Ion	Ratio	Lower	Upper
176	100		
120	1.8	0.0	0.0#
91	0.0	0.0	0.0

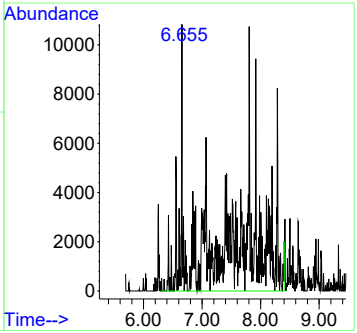


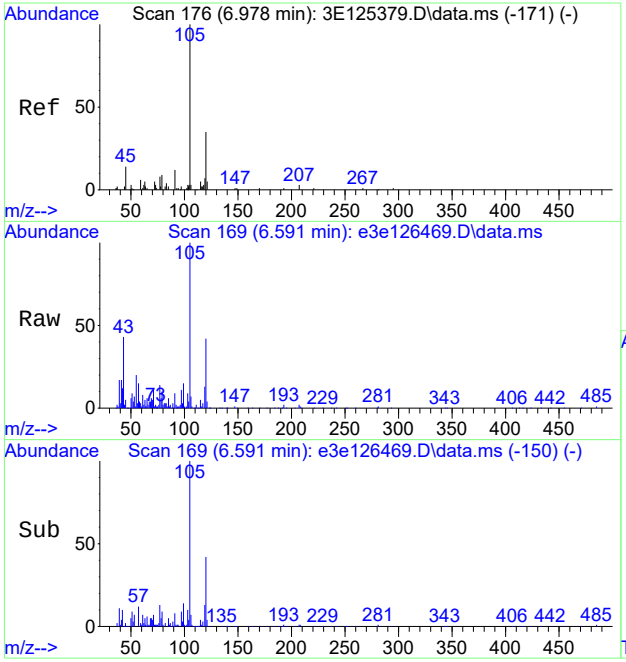
Appendix C. Tier 1 Analysis Tech Memos



#11
Cyclic Isoprenoid
Concen: 187917.00 m
RT: 6.655 min Scan# 181
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:113 Resp: 187917

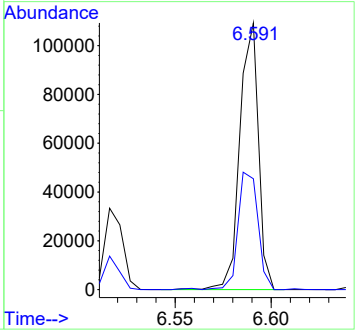




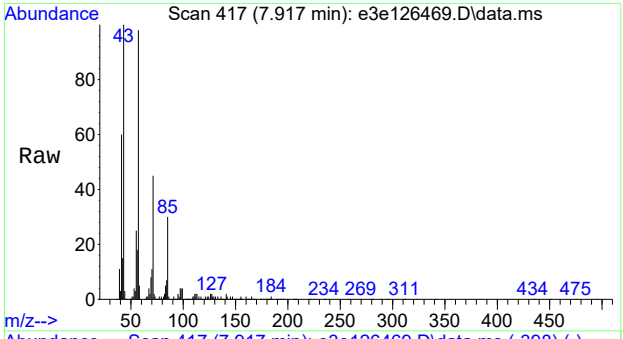
#12
Trimethylbenzene
Concen: 73478.00
RT: 6.591 min Scan# 169
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:105 Resp: 73478

Ion	Ratio	Lower	Upper
105	100		
120	47.2	0.0	0.0#



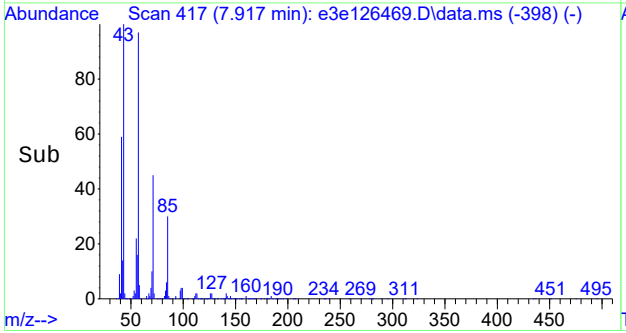
Appendix C. Tier 1 Analysis Tech Memos

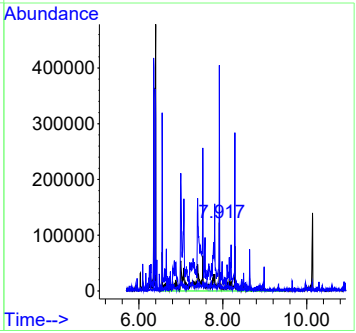


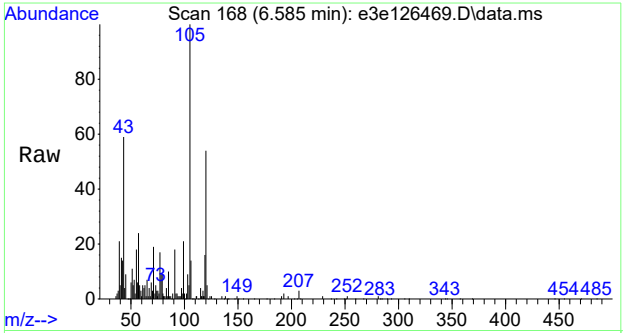
#13
Saturated Hydrocarbons
Concen: 1459881.00 ug/l m
RT: 7.917 min Scan# 417
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 85 Resp: 1459881

Ion	Ratio	Lower	Upper
85	100		
83	1.4	0.0	0.0#
57	18.3	0.0	0.0#



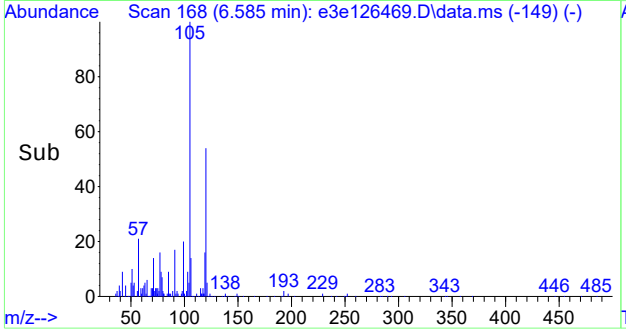


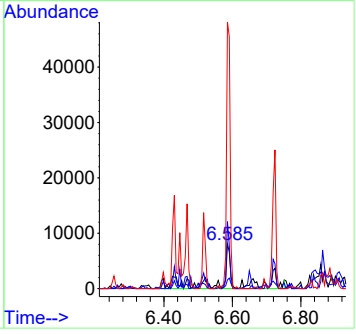


#14
Alkylated Benzenes
Concen: 23322.00 ug/l m
RT: 6.585 min Scan# 168
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

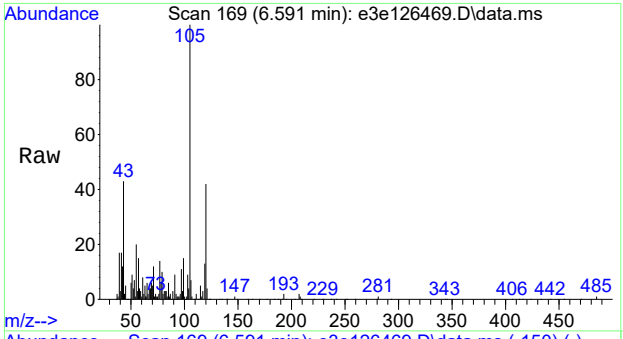
Tgt Ion: 78 Resp: 23322

Ion	Ratio	Lower	Upper
78	100		
92	7.8	0.0	0.0#
106	31.4	0.0	0.0#
120	148.6	0.0	0.0#





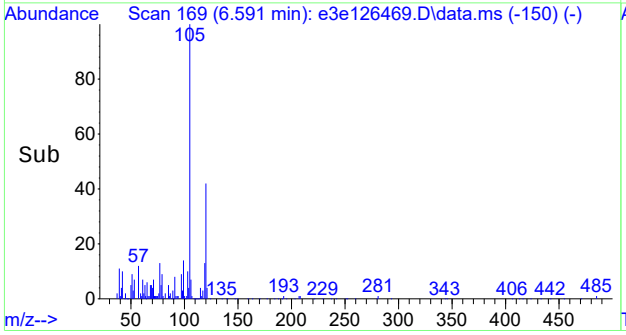
Appendix C. Tier 1 Analysis Tech Memos

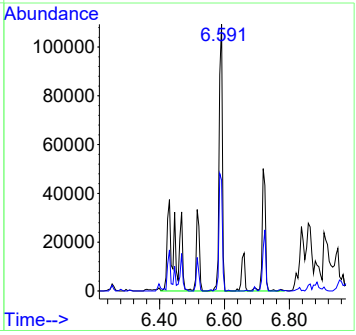


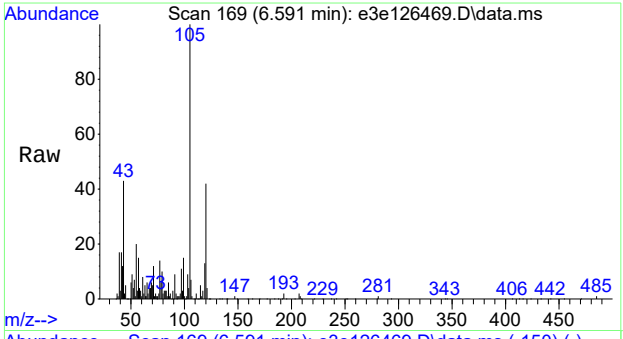
#15
C3 Alkylated Benzene
Concen: 207135.00 ug/l m
RT: 6.591 min Scan# 169
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:105 Resp: 207135

Ion	Ratio	Lower	Upper
105	100		
120	16.7	0.0	0.0#



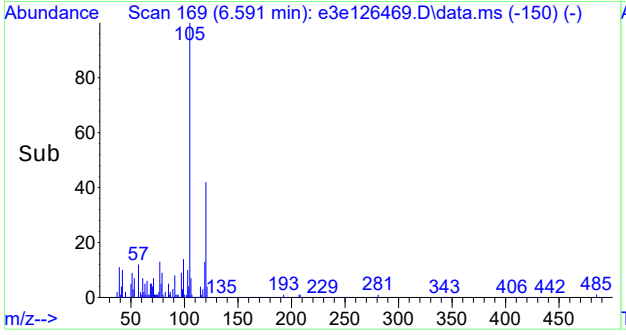


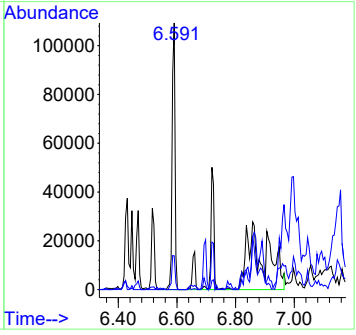


#16
C4 Alkylated Benzene
Concen: 243696.00 ug/l m
RT: 6.591 min Scan# 169
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:105 Resp: 243696

Ion	Ratio	Lower	Upper
105	100		
119	4.6	0.0	0.0#
134	0.0	0.0	0.0





7.3.1

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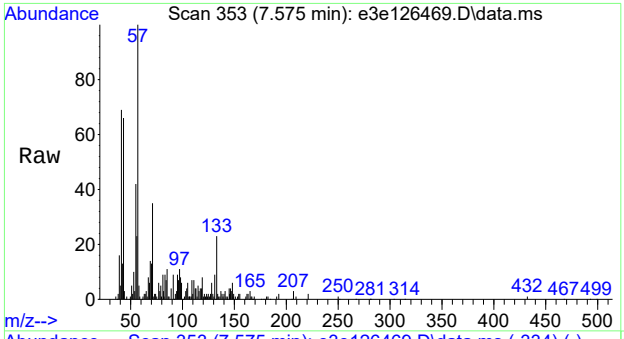
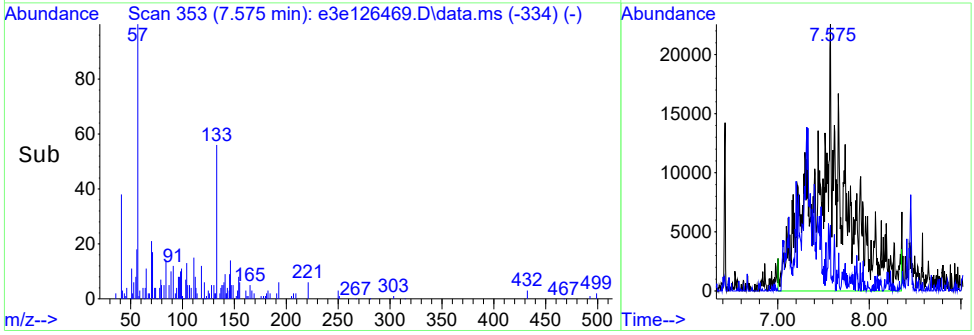
Appendix C. Tier 1 Analysis Tech Memos

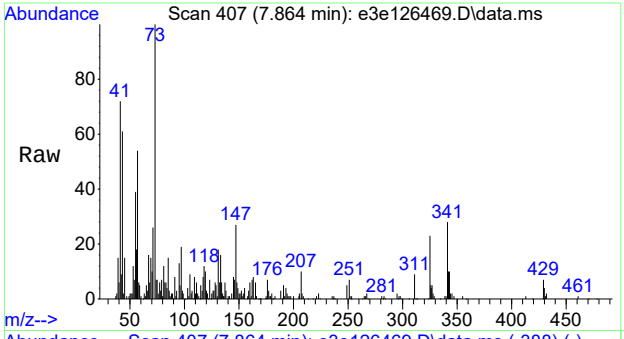


#17
C5 Alkylated Benzene
Concen: 456438.00 ug/l m
RT: 7.575 min Scan# 353
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:133 Resp: 456438

Ion	Ratio	Lower	Upper
133	100		
148	0.7	0.0	0.0#

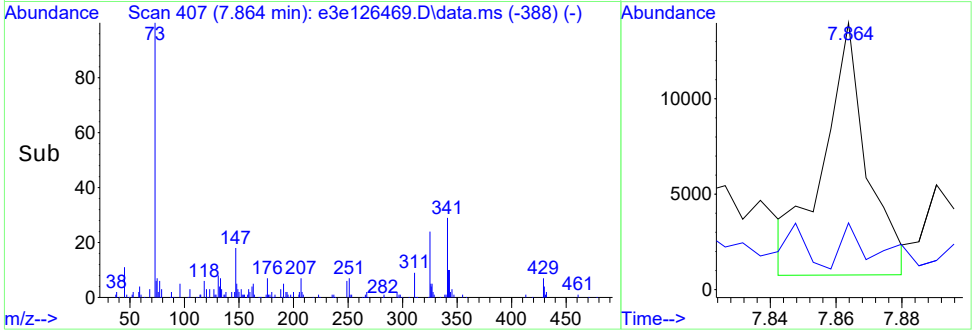




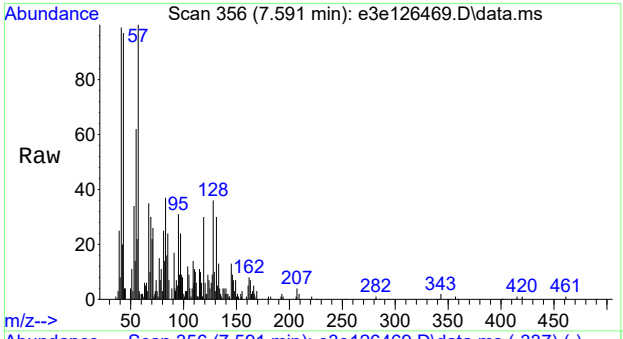
#18
C6 Alkylated Benzene
Concen: 12195.00 ug/l
RT: 7.864 min Scan# 407
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:147 Resp: 12195

Ion	Ratio	Lower	Upper
147	100		
162	28.2	0.0	0.0#



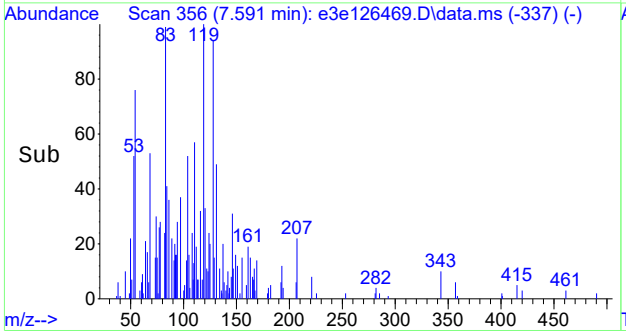
Appendix C. Tier 1 Analysis Tech Memos

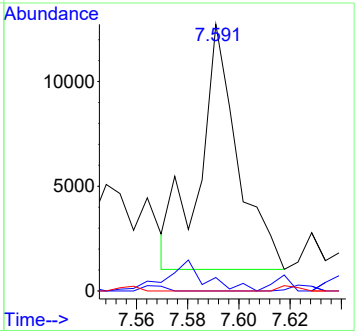


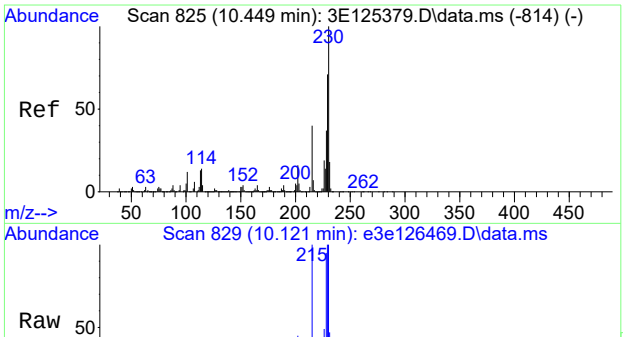
#19
Alkylated Naphthalenes
Concen: 12171.00 ug/l
RT: 7.591 min Scan# 356
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:128 Resp: 12171

Ion	Ratio	Lower	Upper
128	100		
142	12.8	0.0	0.0#
156	0.0	0.0	0.0
170	0.0	0.0	0.0



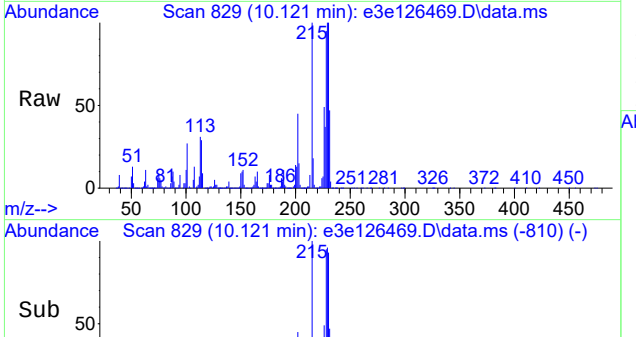


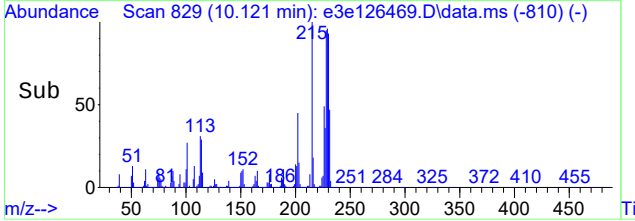


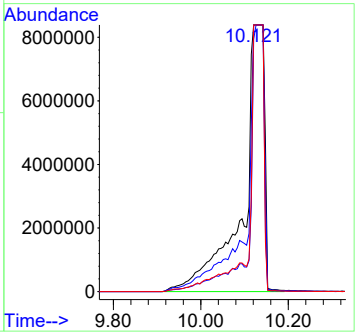
#26
o-Terphenyl
Concen: 29463984.00 m
RT: 10.121 min Scan# 829
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:230 Resp:29463984

Ion	Ratio	Lower	Upper
230	100		
229	7.7	43.0	83.0#
228	51.0	27.3	67.3
215	8.3	30.0	70.0#

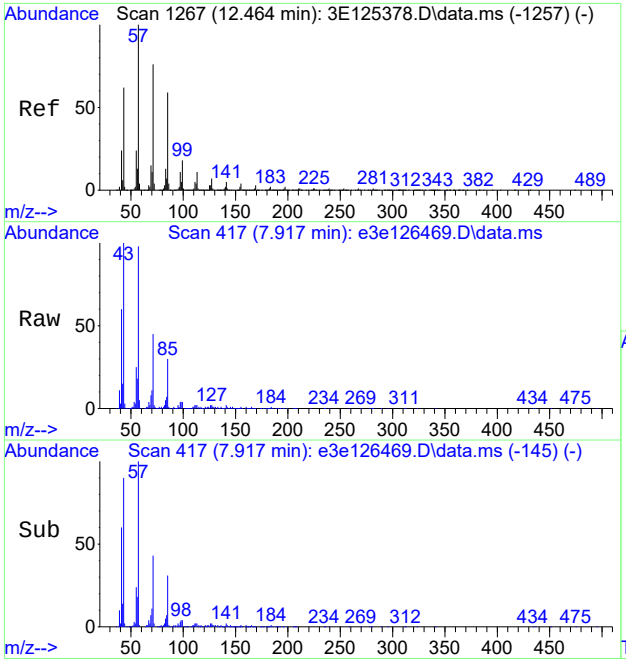






(b) (4)

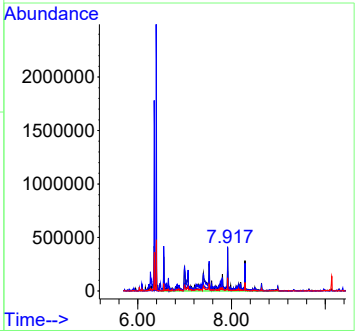
Appendix C. Tier 1 Analysis Tech Memos

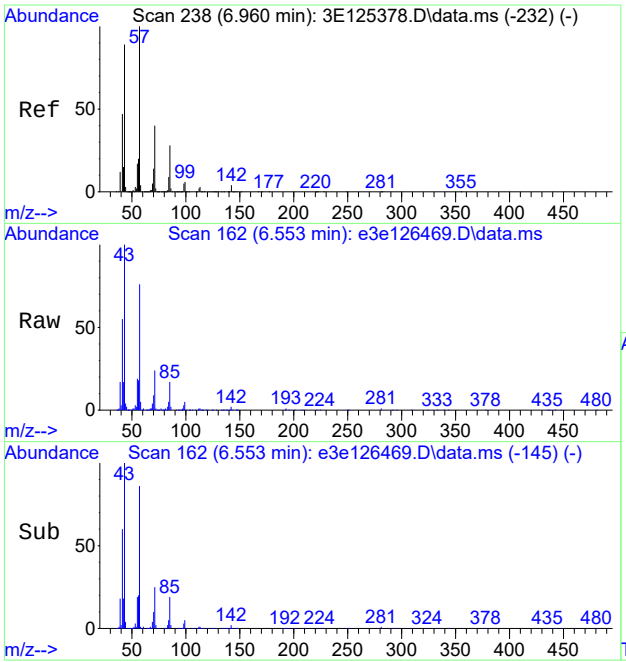


#29
n-Alkane
Concen: 5355733.00 m
RT: 7.917 min Scan# 417
Delta R.T. 1.353 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 5355733

Ion	Ratio	Lower	Upper
57	100		
43	6.7	0.0	20.0
71	1.5	162.1	202.1#
85	0.8	0.0	20.0

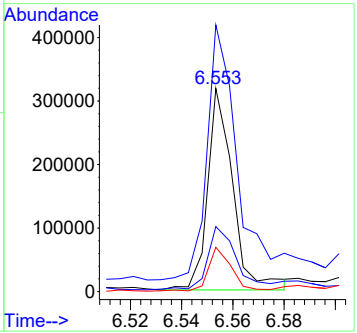




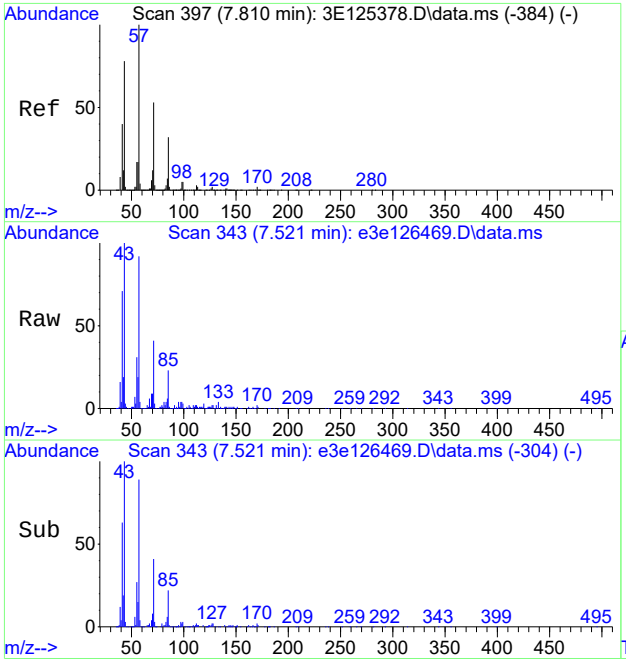
#32
n-Decane (C10)
Concen: 218131.00
RT: 6.553 min Scan# 162
Delta R.T. -0.011 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 218131

Ion	Ratio	Lower	Upper
57	100		
43	165.6	72.3	108.5#
71	36.0	31.3	46.9
85	20.0	22.2	33.4#



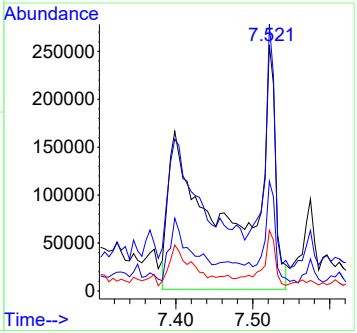
Appendix C. Tier 1 Analysis Tech Memos

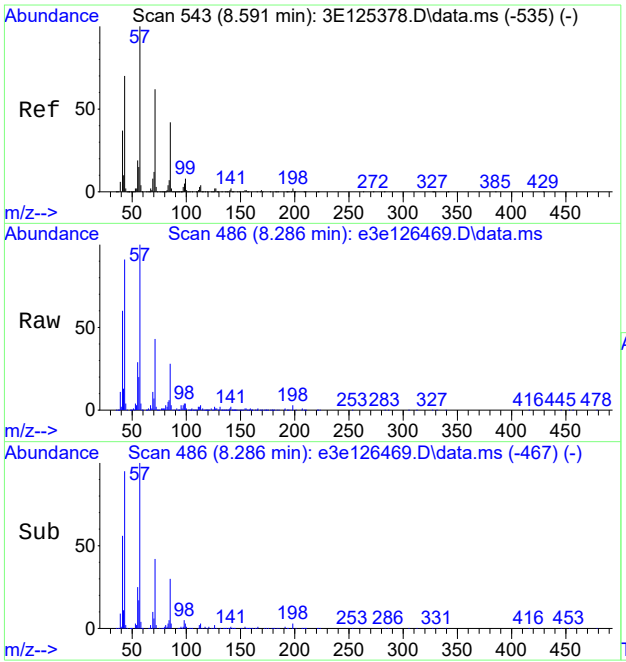


#33
n-Dodecane (C12)
Concen: 903236.00 m
RT: 7.521 min Scan# 343
Delta R.T. 0.107 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 903236

Ion	Ratio	Lower	Upper
57	100		
43	33.3	62.2	93.2#
71	14.0	42.4	63.6#
85	9.8	25.9	38.9#

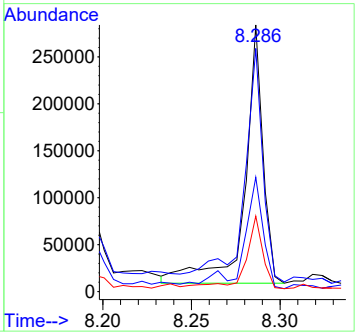




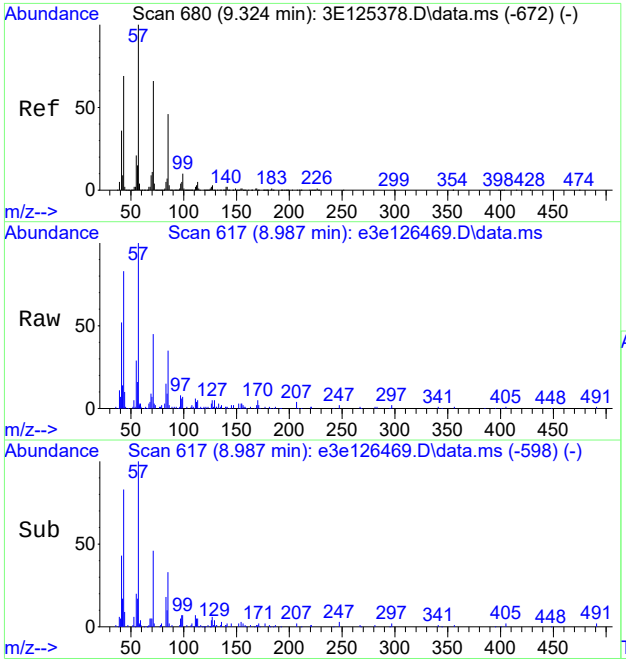
#34
n-Tetradecane (C14)
Concen: 198967.00
RT: 8.286 min Scan# 486
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 198967

Ion	Ratio	Lower	Upper
57	100		
43	93.8	57.6	86.4#
71	46.9	48.6	73.0#
85	25.6	32.5	48.7#



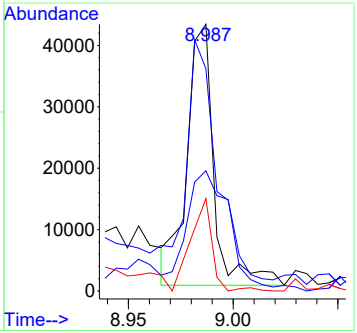
Appendix C. Tier 1 Analysis Tech Memos

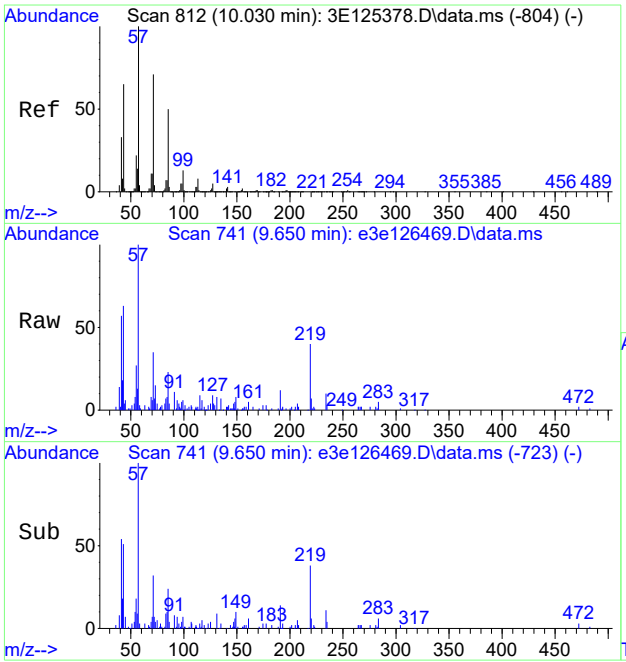


#35
n-Hexadecane (C16)
Concen: 38399.00
RT: 8.987 min Scan# 617
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 38399

Ion	Ratio	Lower	Upper
57	100		
43	106.1	54.8	82.2#
71	73.6	52.3	78.5
85	27.5	36.8	55.2#

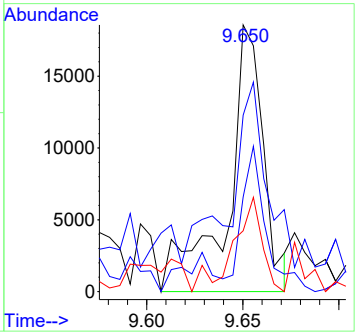




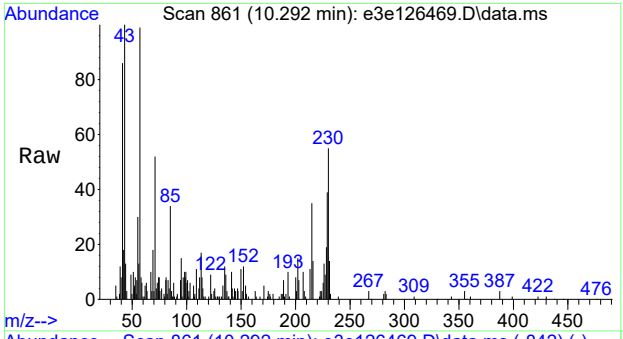
#36
n-Octadecane (C18)
Concen: 24307.00
RT: 9.650 min Scan# 741
Delta R.T. -0.005 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 24307

Ion	Ratio	Lower	Upper
57	100		
43	58.1	53.4	80.0
71	36.1	55.1	82.7#
85	28.1	39.5	59.3#



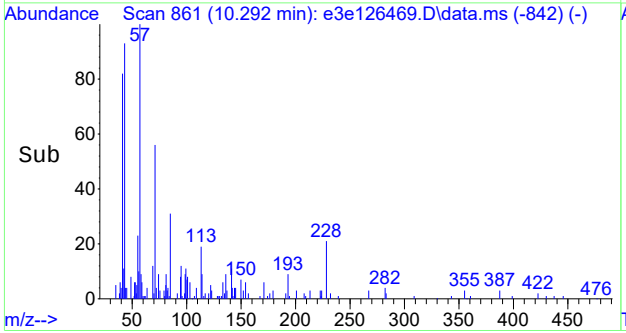
Appendix C. Tier 1 Analysis Tech Memos

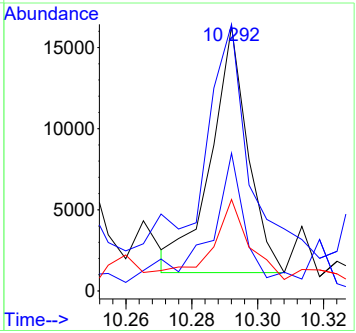


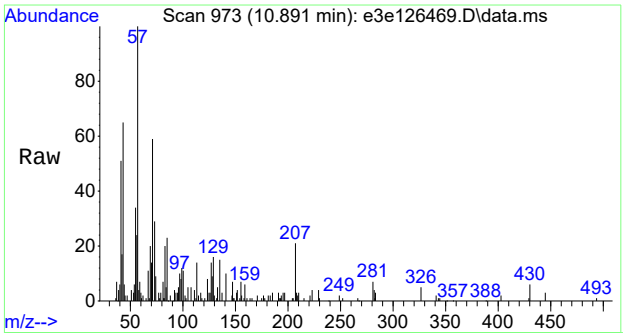
#37
n-Eicosane (C20)
Concen: 11770.00
RT: 10.292 min Scan# 861
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 11770

Ion	Ratio	Lower	Upper
57	100		
43	120.1	52.6	79.0#
71	52.0	56.2	84.2#
85	31.9	41.5	62.3#



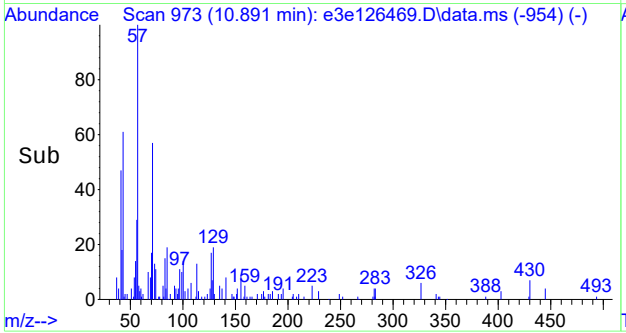


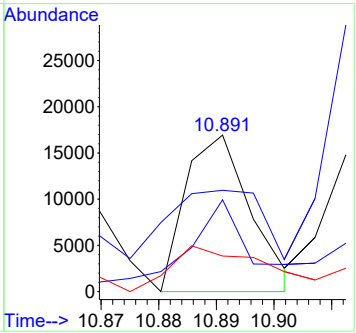


#39
n-Docosane (C22)
Concen: 13293.00
RT: 10.891 min Scan# 973
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 13293

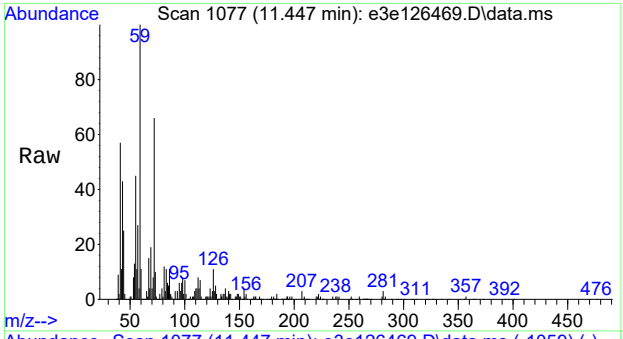
Ion	Ratio	Lower	Upper
57	100		
43	80.0	50.8	76.2#
71	58.0	57.0	85.6
85	42.6	43.1	64.7#





(b) (4)

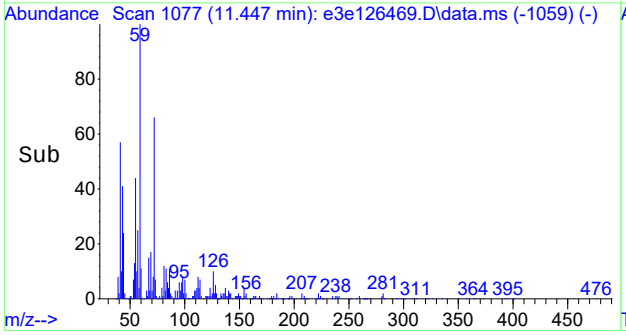
Appendix C. Tier 1 Analysis Tech Memos

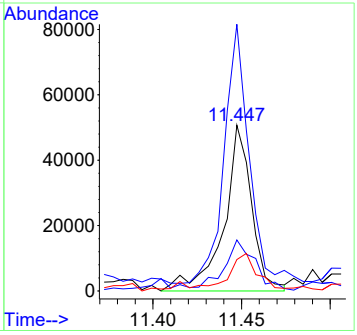


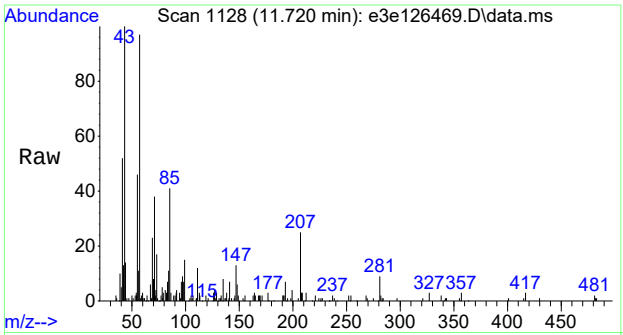
#41
n-Tetracosane (C24)
Concen: 55399.00
RT: 11.447 min Scan# 1077
Delta R.T. -0.005 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 55399

Ion	Ratio	Lower	Upper
57	100		
43	141.1	50.7	76.1#
71	33.1	57.8	86.8#
85	20.5	44.2	66.2#



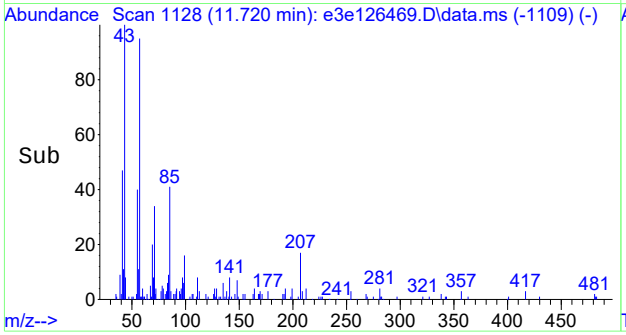


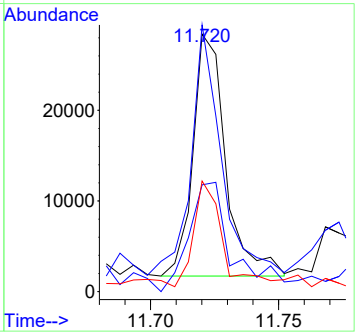


#42
n-Pentacosane (C25)
Concen: 23790.00
RT: 11.720 min Scan# 1128
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

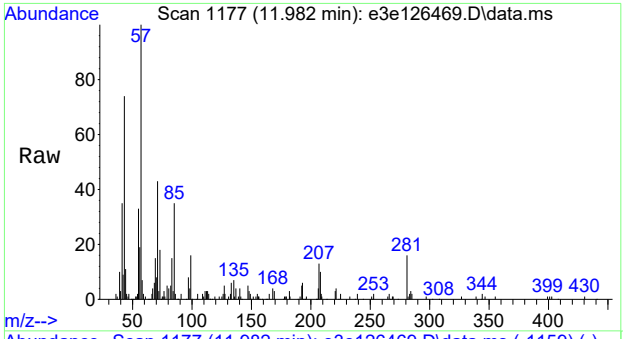
Tgt Ion: 57 Resp: 23790

Ion	Ratio	Lower	Upper
57	100		
43	95.0	63.9	95.9
71	60.7	56.4	84.6
85	55.0	34.0	51.0#





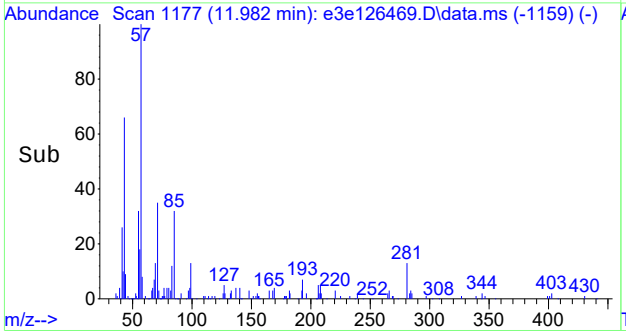
Appendix C. Tier 1 Analysis Tech Memos

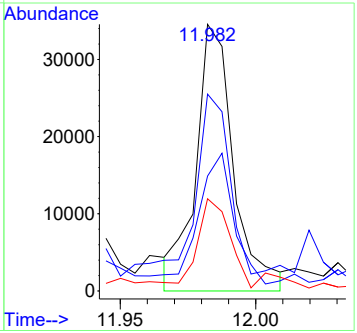


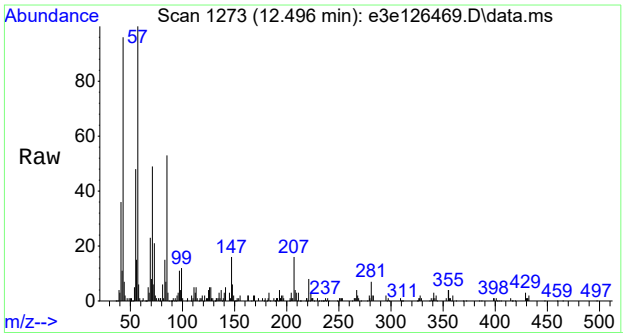
#43
n-Hexacosane (C26)
Concen: 33553.00 m
RT: 11.982 min Scan# 1177
Delta R.T. -0.005 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 33553

Ion	Ratio	Lower	Upper
57	100		
43	3.8	50.5	75.7#
71	4.9	58.6	87.8#
85	4.5	45.3	67.9#



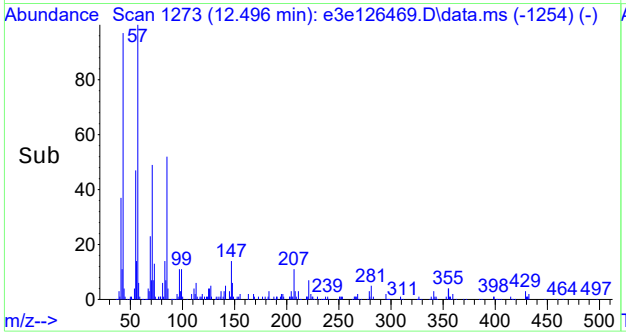


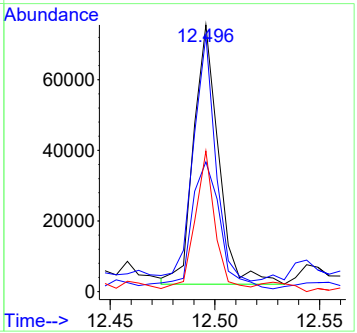


#45
n-Octacosane (C28)
Concen: 60654.00
RT: 12.496 min Scan# 1273
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

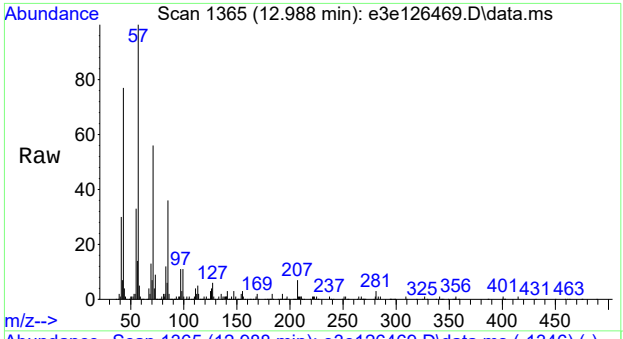
Tgt Ion: 57 Resp: 60654

Ion	Ratio	Lower	Upper
57	100		
43	83.9	48.6	73.0#
71	56.8	58.3	87.5#
85	43.9	45.0	67.6#





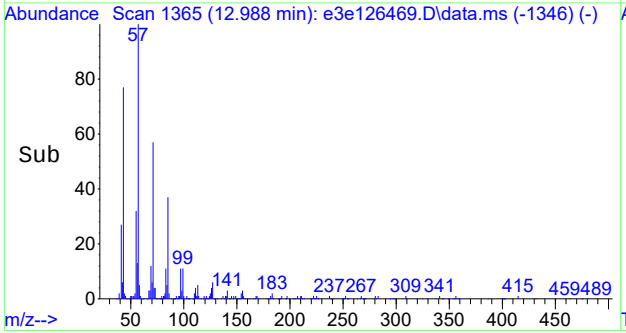
Appendix C. Tier 1 Analysis Tech Memos

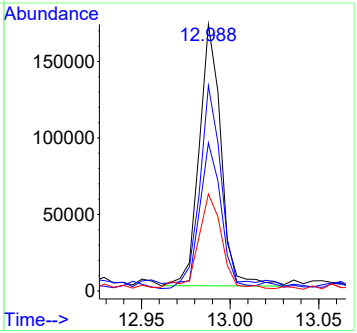


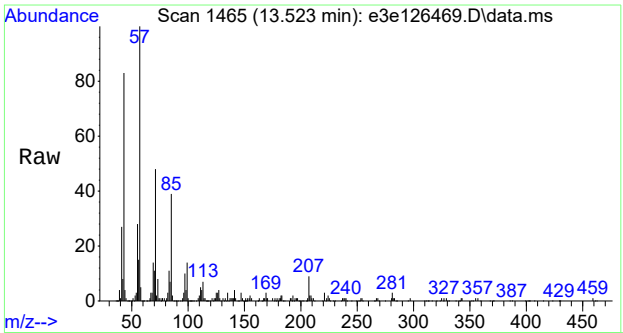
#47
n-Triacontane (C30)
Concen: 146554.00
RT: 12.988 min Scan# 1365
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 146554

Ion	Ratio	Lower	Upper
57	100		
43	71.5	47.7	71.5
71	55.6	58.2	87.4#
85	38.7	45.5	68.3#



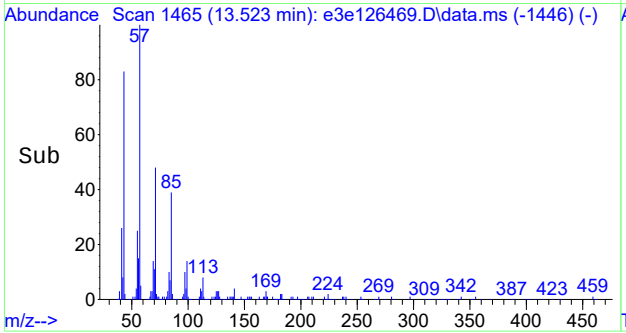


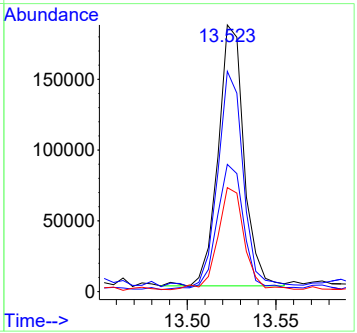


#48
n-Doatriacontane (C32)
Concen: 187166.00
RT: 13.523 min Scan# 1465
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

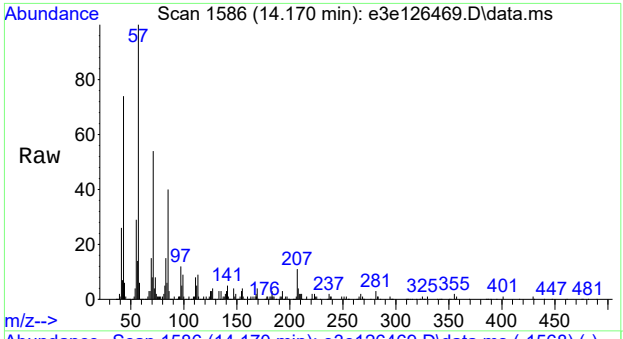
Tgt Ion: 57 Resp: 187166

Ion	Ratio	Lower	Upper
57	100		
43	81.4	46.9	70.3#
71	50.7	57.4	86.0#
85	40.2	44.5	66.7#





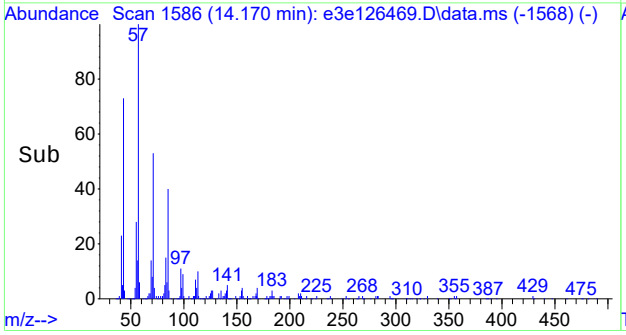
Appendix C. Tier 1 Analysis Tech Memos

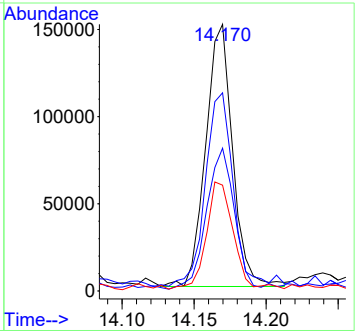


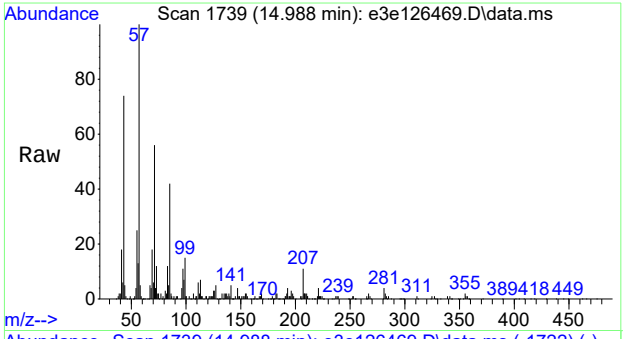
#49
n-Tetratriacontane (C34)
Concen: 196020.00
RT: 14.170 min Scan# 1586
Delta R.T. -0.005 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 196020

Ion	Ratio	Lower	Upper
57	100		
43	75.8	45.9	68.9#
71	55.2	56.8	85.2#
85	40.2	43.7	65.5#



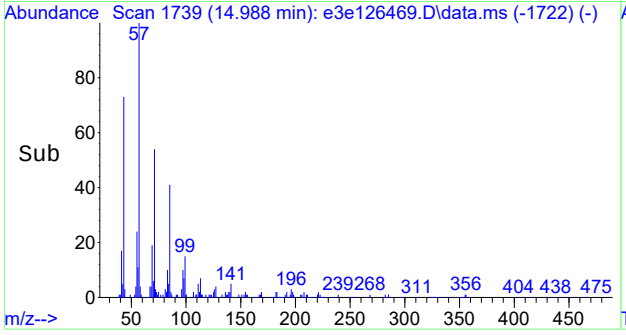


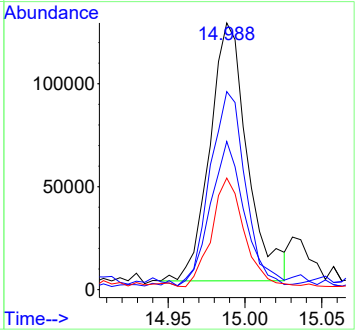


#50
n-Hexatriacontane (C36)
Concen: 212811.00
RT: 14.988 min Scan# 1739
Delta R.T. -0.011 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

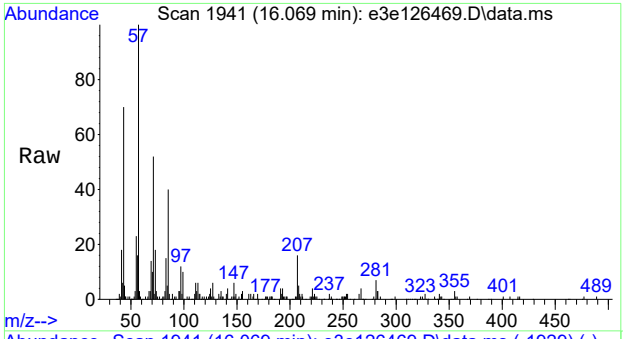
Tgt Ion: 57 Resp: 212811

Ion	Ratio	Lower	Upper
57	100		
43	71.1	45.0	67.6#
71	51.4	56.8	85.2#
85	37.0	43.5	65.3#





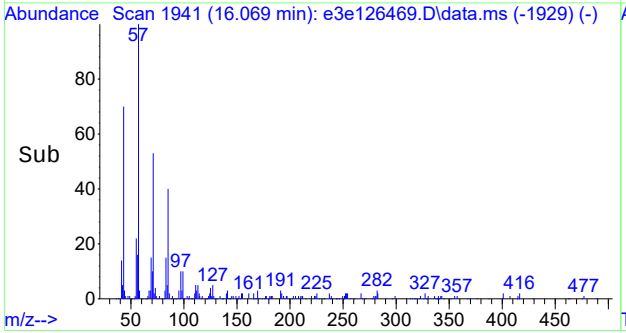
Appendix C. Tier 1 Analysis Tech Memos

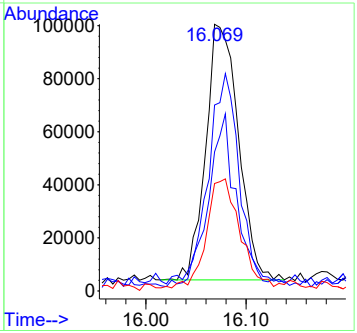


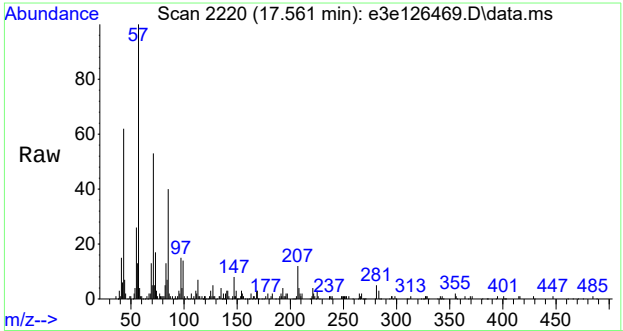
#51
n-Octatriacontane (C38)
Concen: 219332.00
RT: 16.069 min Scan# 1941
Delta R.T. -0.037 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion: 57 Resp: 219332

Ion	Ratio	Lower	Upper
57	100		
43	77.8	44.0	66.0#
71	57.7	56.6	85.0
85	43.1	43.1	64.7#



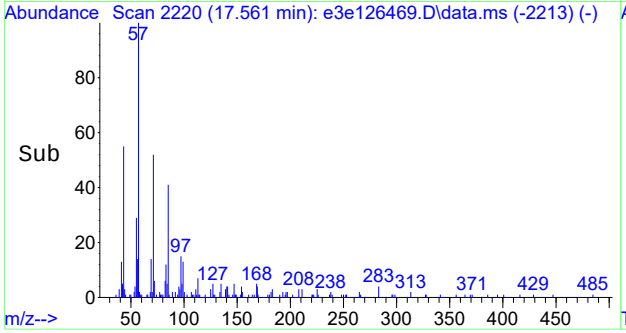


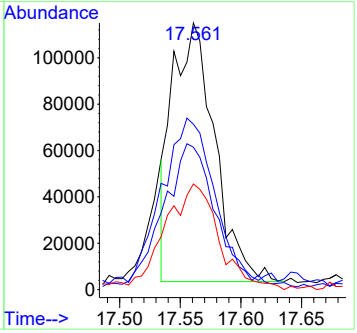


#52
n-Tetracontane (C40)
Concen: 271494.00
RT: 17.561 min Scan# 2220
Delta R.T. -0.064 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

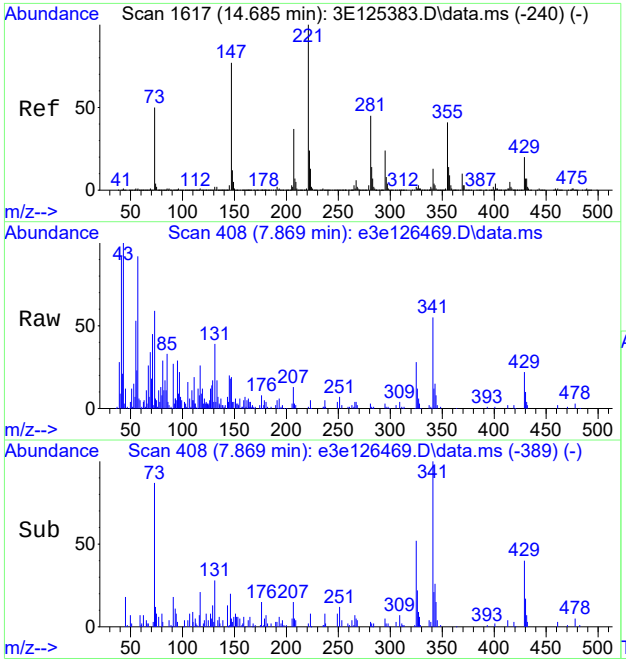
Tgt Ion: 57 Resp: 271494

Ion	Ratio	Lower	Upper
57	100		
43	57.5	42.4	63.6
71	57.5	56.5	84.7
85	44.3	43.1	64.7





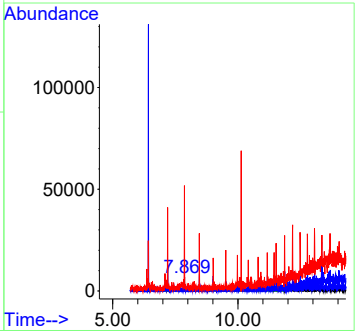
Appendix C. Tier 1 Analysis Tech Memos

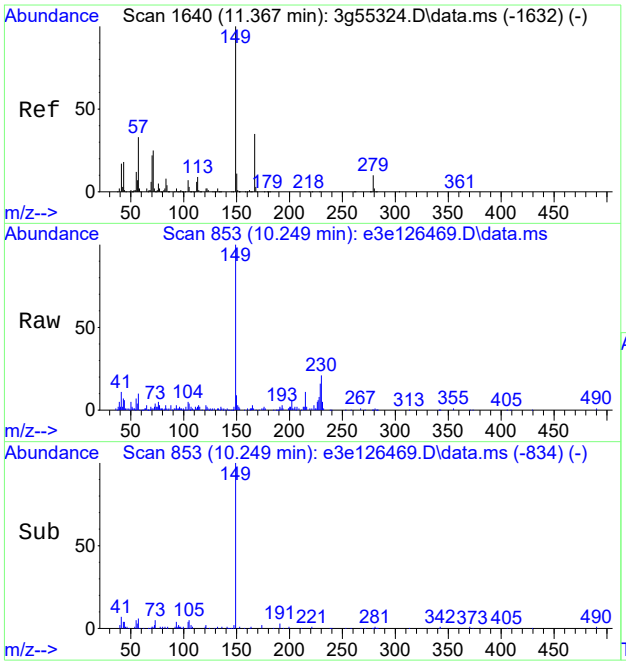


#53
Siloxane
Concen: 23604.00 m
RT: 7.869 min Scan# 408
Delta R.T. 0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:429 Resp: 23604

Ion	Ratio	Lower	Upper
429	100		
355	0.0	0.0	20.0
281	4.7	0.0	20.0
73	147.6	0.0	20.0#

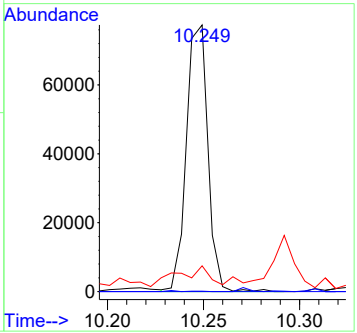




#55
Bis(2-ethylhexyl)phthalate
Concen: 60339.00
RT: 10.249 min Scan# 853
Delta R.T. -0.000 min
Lab File: e3e126469.D
Acq: 31 Dec 2024 10:49 am

Tgt Ion:149 Resp: 60339

Ion	Ratio	Lower	Upper
149	100		
167	0.0	14.3	54.3#
279	0.0	0.0	30.6
57	6.8	14.0	54.0#



Appendix C. Tier 1 Analysis Tech Memos

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\J(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126469.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.553	159	162	166	rBV	1557581	1066904	0.27%	0.220%
2	6.591	166	169	171	rVV	350359	265881	0.07%	0.055%
3	6.655	176	181	184	rVB2	536035	434124	0.11%	0.090%
4	6.682	184	186	188	rBV	87986	58017	0.01%	0.012%
5	6.719	190	193	197	rBV3	304753	345660	0.09%	0.071%
6	6.746	197	198	205	rVB3	209585	197688	0.05%	0.041%
7	6.837	205	215	218	rBV8	349589	893600	0.23%	0.185%
8	6.912	227	229	233	rVB4	166416	189643	0.05%	0.039%
9	6.997	237	245	251	rBV	1099255	2193274	0.56%	0.453%
10	7.072	257	259	263	rVB	654516	481602	0.12%	0.100%
11	7.190	278	281	283	rBV	184726	192096	0.05%	0.040%
12	7.291	297	300	304	rVB6	132651	156759	0.04%	0.032%
13	7.398	316	320	330	rBV4	686601	1525022	0.39%	0.315%
14	7.521	340	343	347	rVB	1133661	903151	0.23%	0.187%
15	7.575	350	353	355	rVB	296510	186188	0.05%	0.038%
16	7.666	367	370	377	rVB6	120258	196348	0.05%	0.041%
17	7.730	379	382	385	rVV4	216676	248892	0.06%	0.051%
18	7.778	385	391	394	rVV	408084	684490	0.17%	0.141%
19	7.805	394	396	404	rVV	599440	556505	0.14%	0.115%
20	7.864	405	407	411	rVV3	200861	212849	0.05%	0.044%
21	7.917	411	417	421	rVB	1840158	1377898	0.35%	0.285%
22	7.955	422	424	426	rBV3	91240	75397	0.02%	0.016%
23	8.046	439	441	446	rVB6	133983	101133	0.03%	0.021%
24	8.115	450	454	455	rVV3	171353	249151	0.06%	0.051%
25	8.153	459	461	464	rVV2	214476	141879	0.04%	0.029%
26	8.195	464	469	474	rVB2	370043	494738	0.13%	0.102%
27	8.286	483	486	489	rVB	1235859	733649	0.19%	0.152%
28	8.356	497	499	505	rVB7	82210	109270	0.03%	0.023%
29	8.457	514	518	522	rVB5	175716	187716	0.05%	0.039%
30	8.495	522	525	527	rBV2	131716	109089	0.03%	0.023%
31	8.639	548	552	558	rVB	355213	268086	0.07%	0.055%
32	8.709	563	565	577	rVB	37858	96145	0.02%	0.020%
33	8.810	579	584	586	rBV6	27955	29260	0.01%	0.006%
34	8.880	591	597	601	rBV9	35555	69448	0.02%	0.014%
35	8.987	610	617	620	rVV	188627	202985	0.05%	0.042%
36	9.014	620	622	631	rVB9	84818	91478	0.02%	0.019%
37	9.137	642	645	648	rBV5	27790	26897	0.01%	0.006%
38	9.190	650	655	657	rVV6	17420	27308	0.01%	0.006%
39	9.228	657	662	667	rVV3	96478	105201	0.03%	0.022%
40	9.297	671	675	677	rVV5	24294	21061	0.01%	0.004%

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(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	9.340	677	683	686	rVV7	100519	149010	0.04%	0.031%
42	9.372	686	689	692	rVB	108640	81200	0.02%	0.017%
43	9.527	710	718	720	rVV2	228803	297174	0.08%	0.061%
44	9.549	720	722	731	rVB	152465	137268	0.03%	0.028%
45	9.650	735	741	745	rVV3	85663	104271	0.03%	0.022%
46	9.720	750	754	757	rBV6	14828	22468	0.01%	0.005%
47	9.827	769	774	778	rBV8	20228	36212	0.01%	0.007%
48	10.089	783	823	826	rBV	11499065	57654068	14.63%	11.912%
49	10.137	826	832	850	rVV3	310333164	394194854	100.00%	81.444%
50	10.249	850	853	855	rVV	160581	146027	0.04%	0.030%
51	10.271	855	857	860	rVV2	67970	50207	0.01%	0.010%
52	10.372	872	876	880	rVV	185352	143630	0.04%	0.030%
53	10.415	880	884	887	rVB4	61079	53600	0.01%	0.011%
54	10.490	893	898	901	rVB7	19318	34856	0.01%	0.007%
55	10.602	915	919	923	rVB4	121990	130988	0.03%	0.027%
56	10.666	927	931	936	rVB8	36839	52240	0.01%	0.011%
57	10.736	941	944	949	rVB7	19306	22426	0.01%	0.005%
58	10.811	952	958	961	rVB3	68087	69437	0.02%	0.014%
59	10.843	961	964	965	rBV3	19345	20826	0.01%	0.004%
60	10.864	965	968	971	rVV5	68193	61840	0.02%	0.013%
61	10.891	971	973	975	rVV	74262	54890	0.01%	0.011%
62	10.912	975	977	985	rVB	293617	221703	0.06%	0.046%
63	11.073	1001	1007	1012	rVB10	19475	33982	0.01%	0.007%
64	11.175	1022	1026	1030	rVV3	124354	109261	0.03%	0.023%
65	11.212	1030	1033	1037	rVB6	34530	38615	0.01%	0.008%
66	11.319	1050	1053	1055	rVB4	27866	22302	0.01%	0.005%
67	11.362	1057	1061	1063	rBV5	22240	25285	0.01%	0.005%
68	11.447	1070	1077	1085	rBV	1344193	1275121	0.32%	0.263%
69	11.501	1085	1087	1089	rVV2	65525	57013	0.01%	0.012%
70	11.528	1089	1092	1096	rVB2	98130	89284	0.02%	0.018%
71	11.635	1108	1112	1116	rBV7	41327	53044	0.01%	0.011%
72	11.720	1124	1128	1133	rBV	162904	160406	0.04%	0.033%
73	11.768	1134	1137	1143	rVB8	42890	49270	0.01%	0.010%
74	11.865	1151	1155	1157	rBV2	145216	118150	0.03%	0.024%
75	11.939	1166	1169	1172	rVB5	58405	40847	0.01%	0.008%
76	11.988	1175	1178	1182	rVB2	158965	137587	0.03%	0.028%
77	12.111	1198	1201	1204	rBV5	28740	35883	0.01%	0.007%
78	12.185	1210	1215	1218	rBV2	155131	158554	0.04%	0.033%
79	12.244	1222	1226	1229	rBV4	95138	90702	0.02%	0.019%
80	12.421	1255	1259	1263	rBV5	156445	163719	0.04%	0.034%
81	12.496	1268	1273	1278	rVB2	495366	458287	0.12%	0.095%
82	12.549	1279	1283	1285	rBV5	91686	73393	0.02%	0.015%
83	12.581	1285	1289	1296	rVB	1936254	1614496	0.41%	0.334%
84	12.742	1313	1319	1322	rBV7	76409	107562	0.03%	0.022%
85	12.779	1322	1326	1331	rVB4	122382	131881	0.03%	0.027%

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(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	12.859	1336	1341	1345	rBV	1236841	952724	0.24%	0.197%
87	12.988	1361	1365	1374	rVB	838343	719035	0.18%	0.149%
88	13.063	1374	1379	1386	rVB10	134777	174221	0.04%	0.036%
89	13.346	1428	1432	1439	rVB	1006634	1138947	0.29%	0.235%
90	13.400	1440	1442	1449	rVB8	65933	102784	0.03%	0.021%
91	13.523	1461	1465	1473	rBV	953884	981025	0.25%	0.203%
92	13.678	1491	1494	1505	rVB	124259	236590	0.06%	0.049%
93	13.827	1521	1522	1530	rVB8	52539	60609	0.02%	0.013%
94	13.902	1531	1536	1543	rBV4	288226	409172	0.10%	0.085%
95	14.020	1555	1558	1559	rBV2	87124	88504	0.02%	0.018%
96	14.170	1579	1586	1592	rBV	795986	1071053	0.27%	0.221%
97	14.806	1701	1705	1712	rVB10	68428	110979	0.03%	0.023%
98	14.988	1733	1739	1745	rBV2	608467	925851	0.23%	0.191%
99	16.079	1935	1943	1952	rBV2	539558	1184006	0.30%	0.245%
100	17.561	2210	2220	2232	rBV5	532680	1561393	0.40%	0.323%

Sum of corrected areas: 484007214

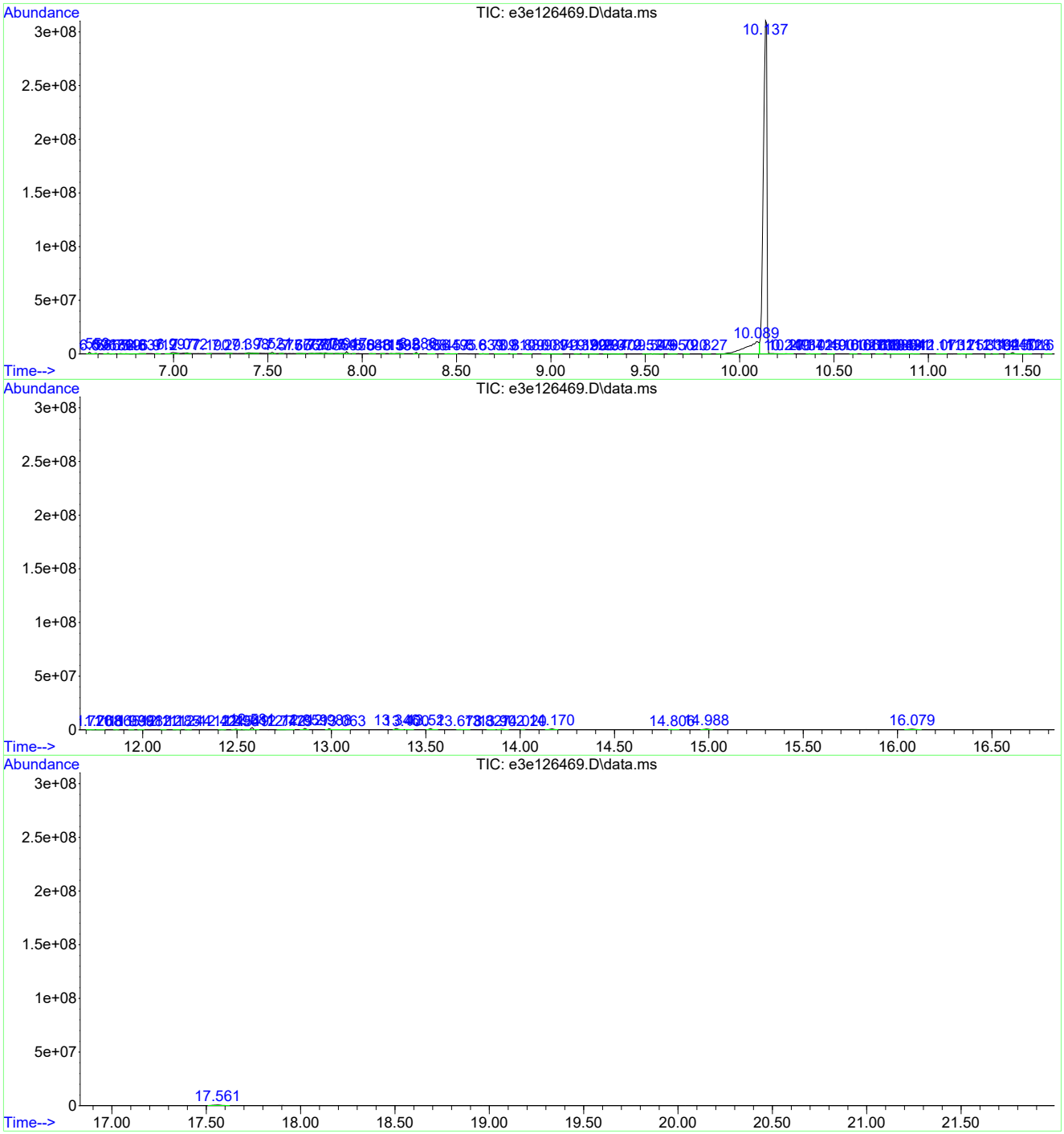
Appendix C. Tier 1 Analysis Tech Memos

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

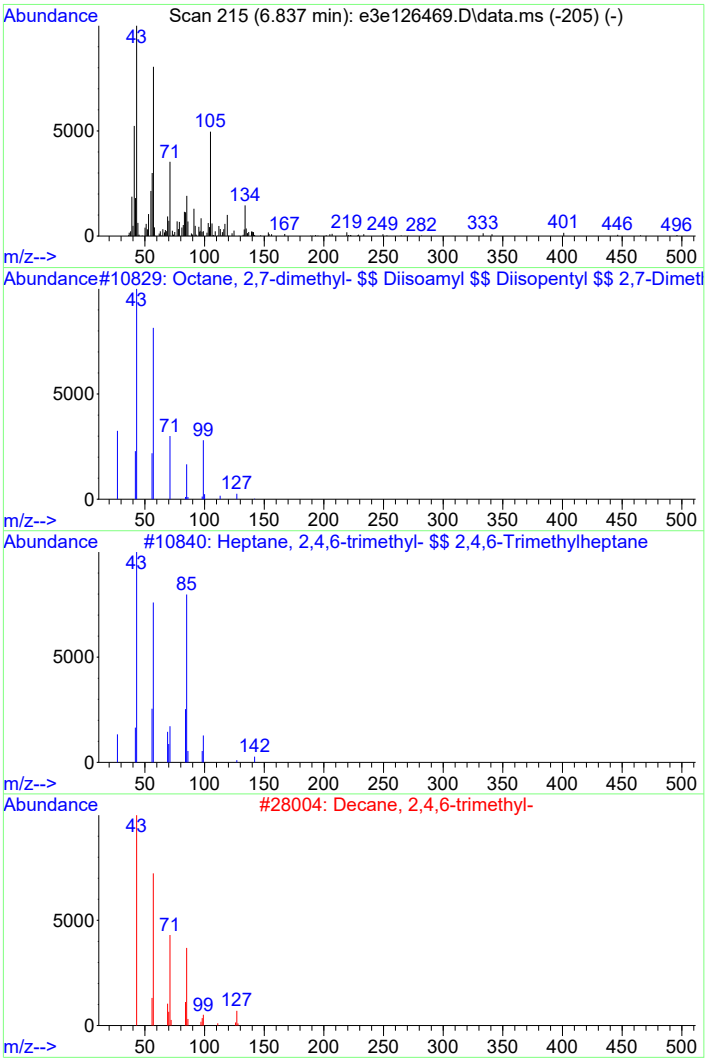
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

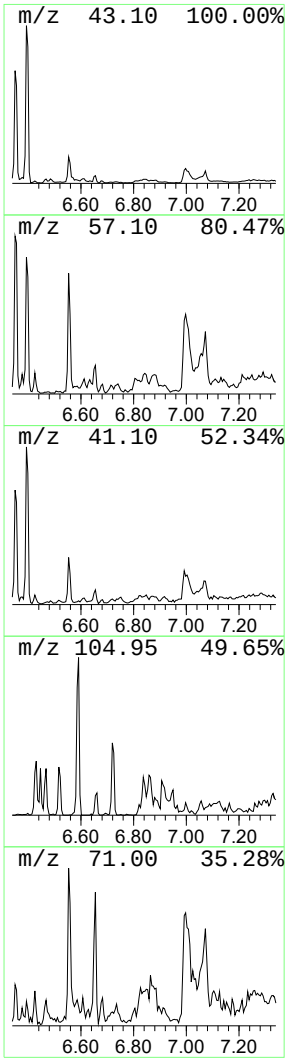
****

Peak Number 1 Alkane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.837	0.00	893600	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Octane, 2,7-dimethyl- $$ Diisoam...	142	C10H22	001072-16-8	58
2	Heptane, 2,4,6-trimethyl- $$ 2,4...	142	C10H22	002613-61-8	50
3	Decane, 2,4,6-trimethyl-	184	C13H28	062108-27-4	50
4	2,6-Dimethyldecane	170	C12H26	013150-81-7	50
5	Nonane, 3,7-dimethyl- $$ 3,7-Dim...	156	C11H24	017302-32-8	47





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:33 2025 5

(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

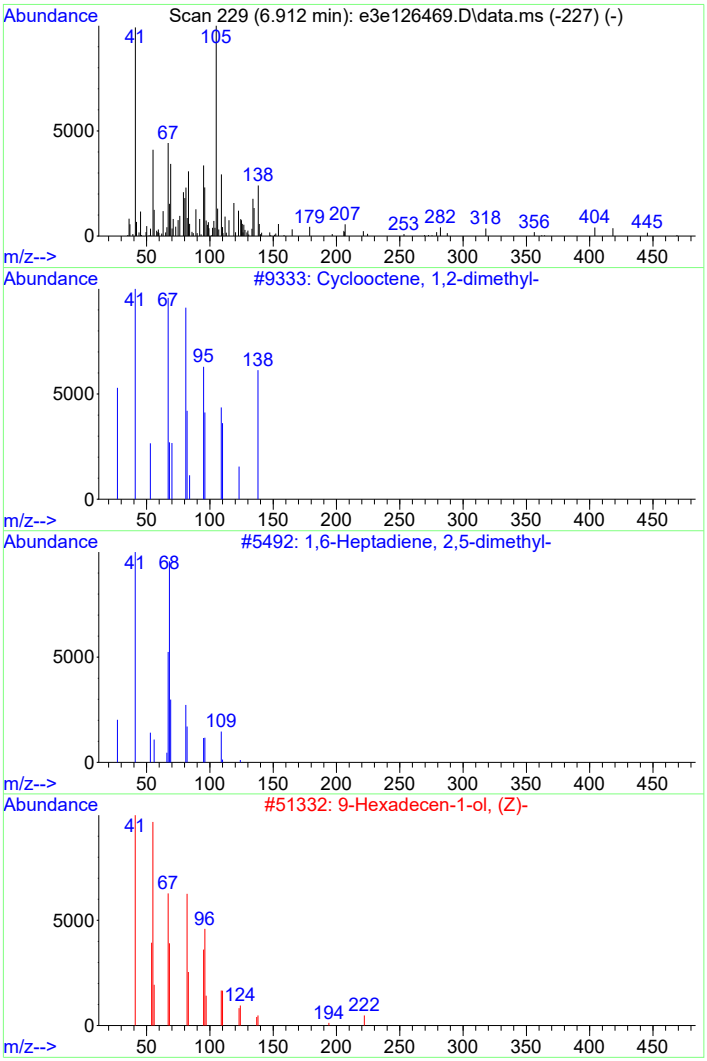
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

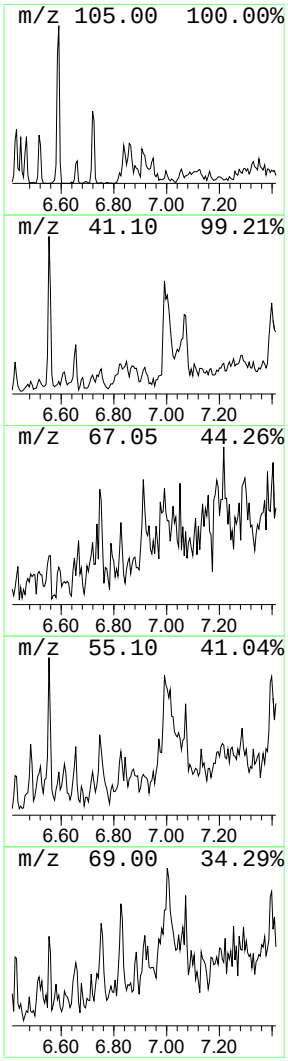
****

Peak Number 2 Cyclooctene, 1,2-dimethyl- Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.912	0.00	189643	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclooctene, 1,2-dimethyl-	138	C10H18	054299-96-6	59
2	1,6-Heptadiene, 2,5-dimethyl-	124	C9H16	068701-90-6	43
3	9-Hexadecen-1-ol, (Z)-	240	C16H32O	010378-01-5	38
4	Butanoic acid, 3,7-dimethyl-6-oc...	226	C14H26O2	000141-16-2	38
5	3,7,10-Trimethyl-4,9-dioxo-4,8,9...	221	C9H11N5O2	000000-00-0	32





(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

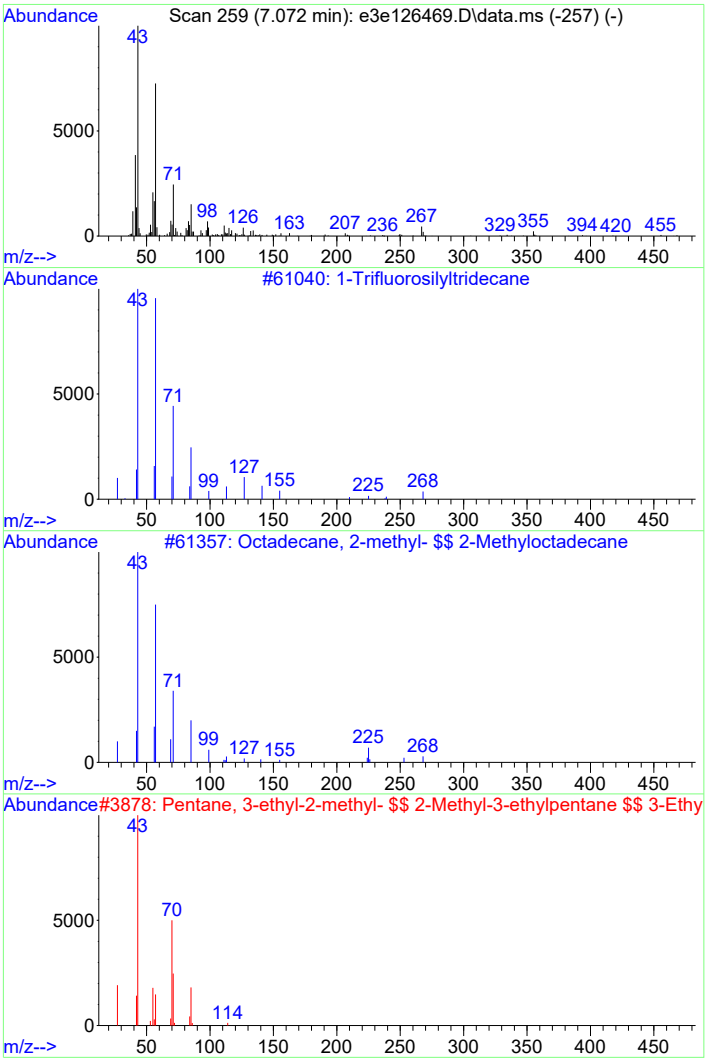
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

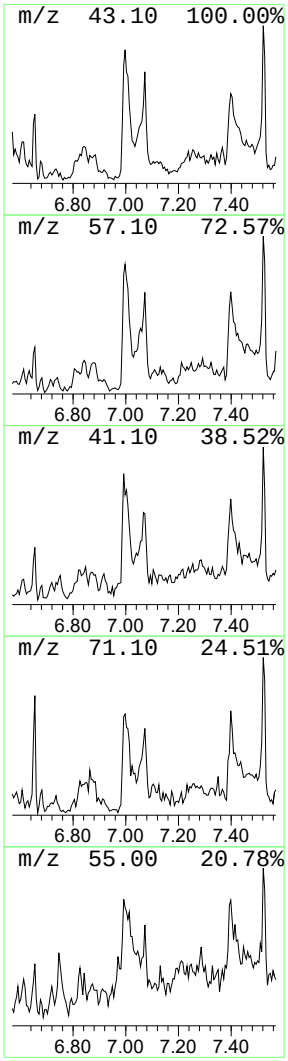
****

Peak Number 3 Alkane Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.072	0.00	481602	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Trifluorosilyltridecane	268	C13H27F3Si	000000-00-0	49
2	Octadecane, 2-methyl- $$ 2-Methy...	268	C19H40	001560-88-9	49
3	Pentane, 3-ethyl-2-methyl- $$ 2-...	114	C8H18	000609-26-7	49
4	Undecane	156	C11H24	001120-21-4	47
5	Heptacosane	380	C27H56	000593-49-7	47





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:35 2025 7

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

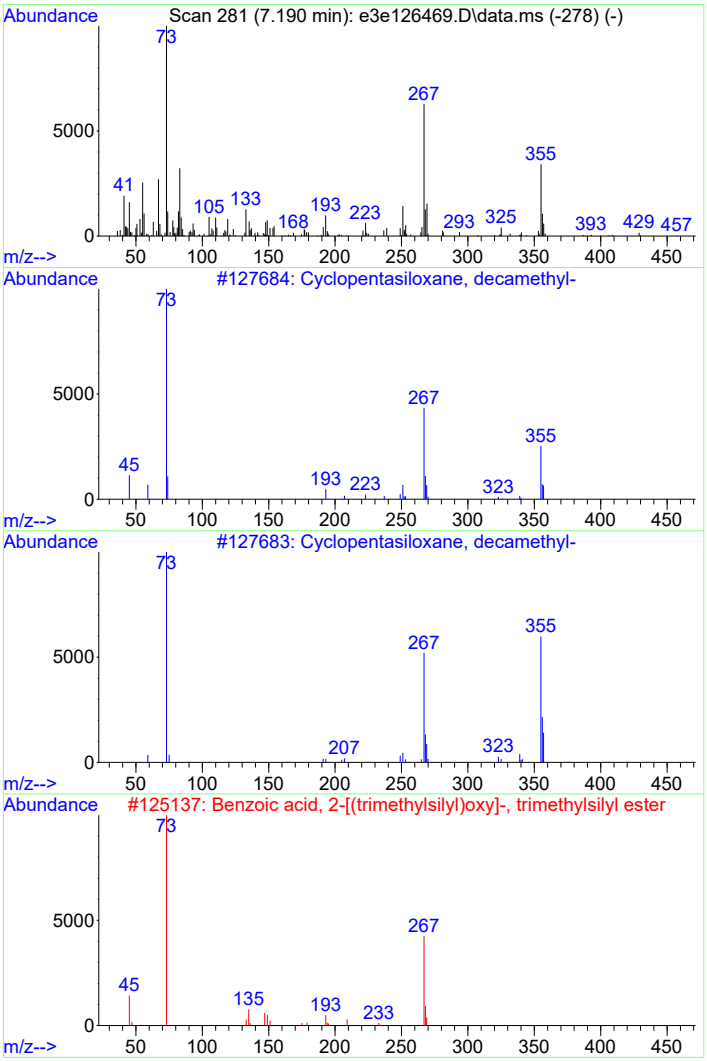
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

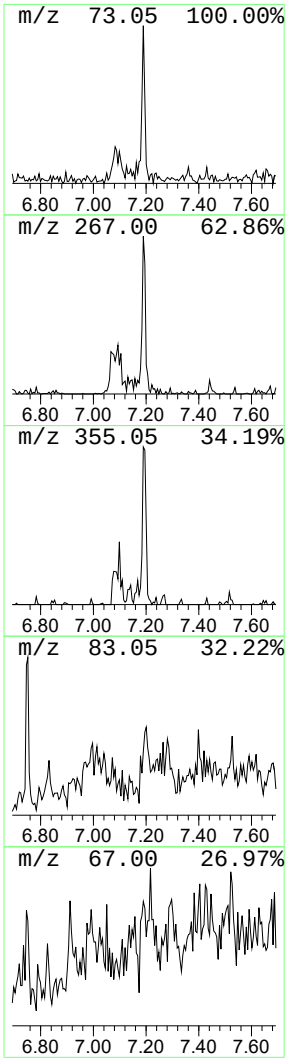
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 4 Cyclopentasiloxane, decamet... Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.190	0.00	192096	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	80
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	47
3	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	43
4	Benzoic acid, 2,6-bis[(trimethyl...	370	C16H30O4Si3	003782-85-2	38
5	N-(Trifluoroacetyl)-O,O',O''-tri...	481	C19H34F3NO4Si3	000000-00-0	38





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:37 2025 8

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

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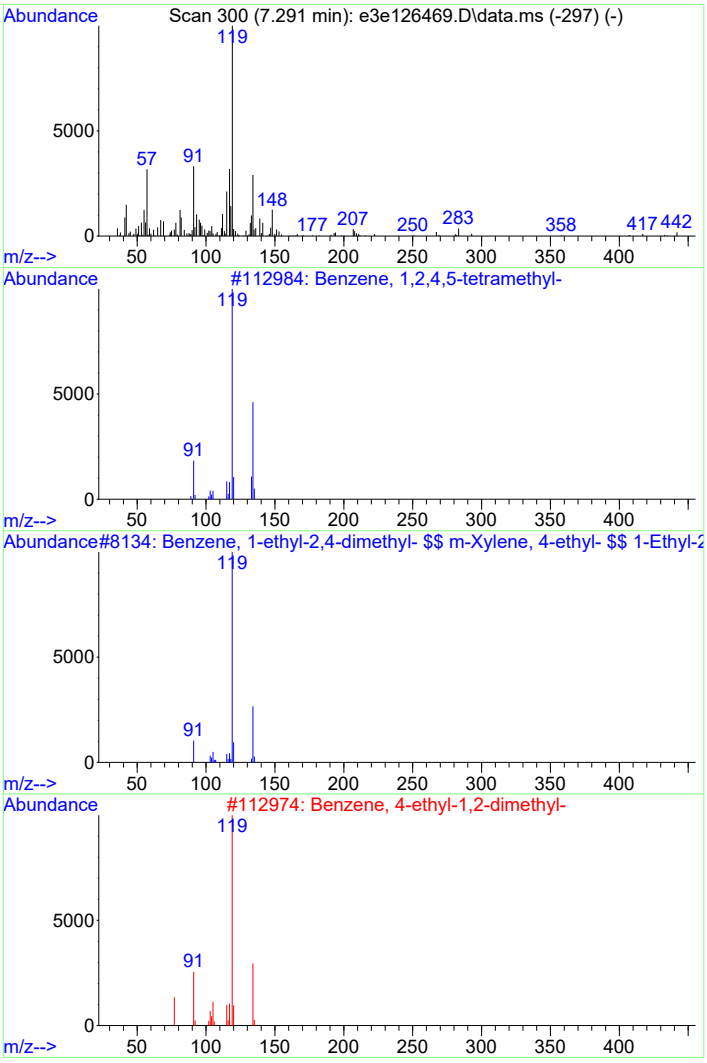
Quant Title : 8270C Calibration

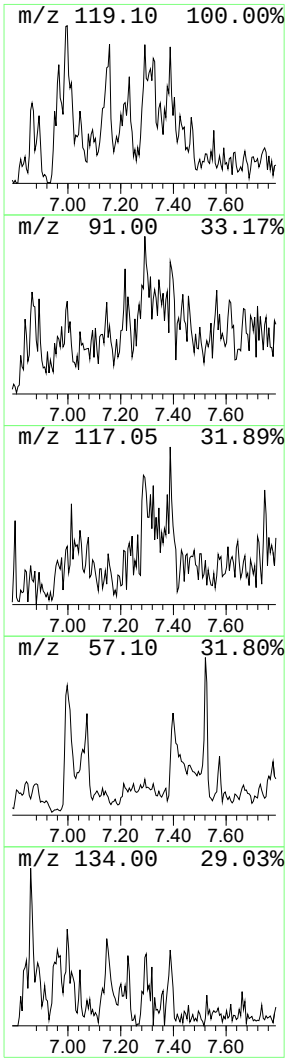
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 5 Benzene, 1,2,4,5-tetramethyl- Concentration Rank 21

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.291	0.00	156759	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 1,2,4,5-tetramethyl-	134	C10H14	000095-93-2	50
2	Benzene, 1-ethyl-2,4-dimethyl- $...	134	C10H14	000874-41-9	49
3	Benzene, 4-ethyl-1,2-dimethyl-	134	C10H14	000934-80-5	47
4	Benzene, methyl(1-methylethyl)- ...	134	C10H14	025155-15-1	47
5	Benzene, 2-ethyl-1,3-dimethyl-	134	C10H14	002870-04-4	47





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Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

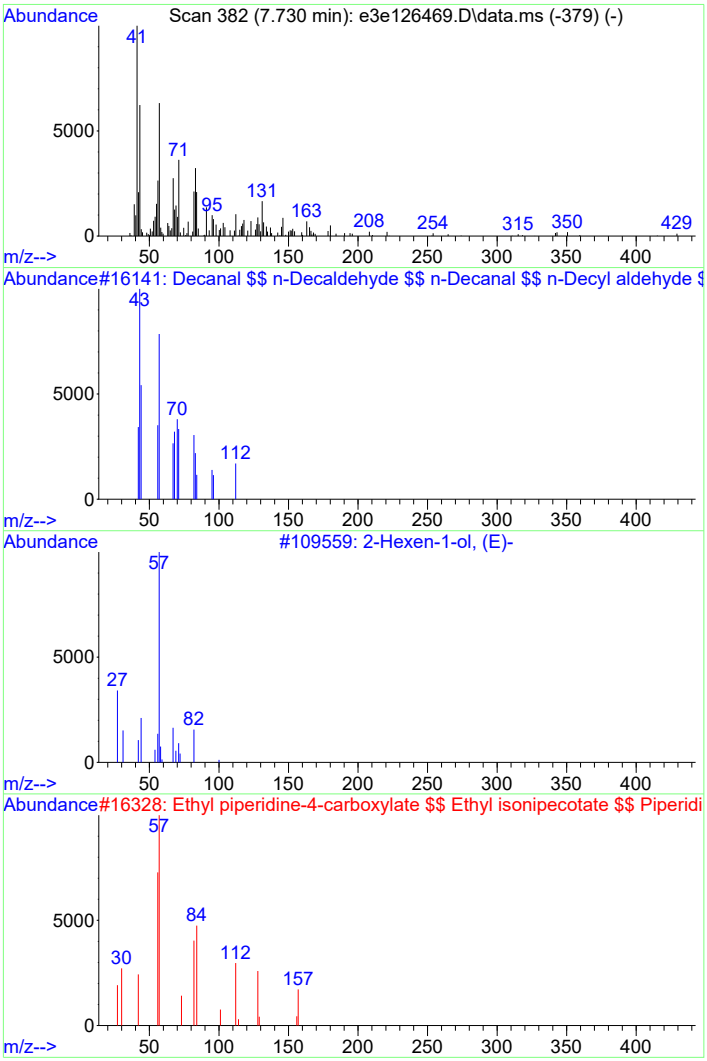
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

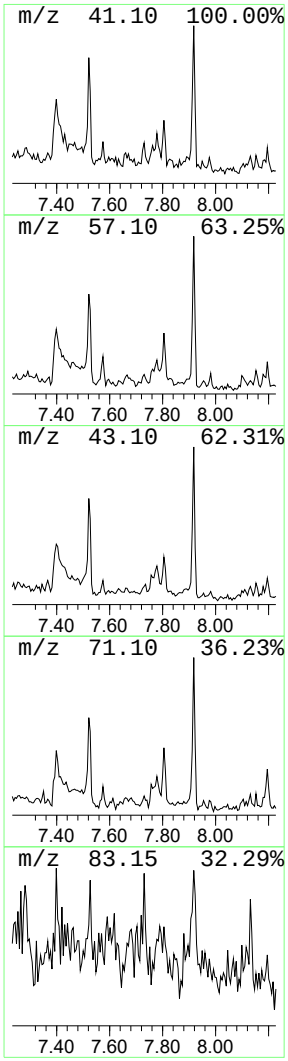
****

Peak Number 7 n-Decaldehyde Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.730	0.00	248892	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decanal $$ n-Decaldehyde $$ n-De...	156	C10H20O	000112-31-2	50
2	2-Hexen-1-ol, (E)-	100	C6H12O	000928-95-0	35
3	Ethyl piperidine-4-carboxylate $...	157	C8H15NO2	001126-09-6	35
4	Undecane, 2,4-dimethyl-	184	C13H28	017312-80-0	27
5	Nonane, 3-methyl-	142	C10H22	005911-04-6	25





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:39 2025 10

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

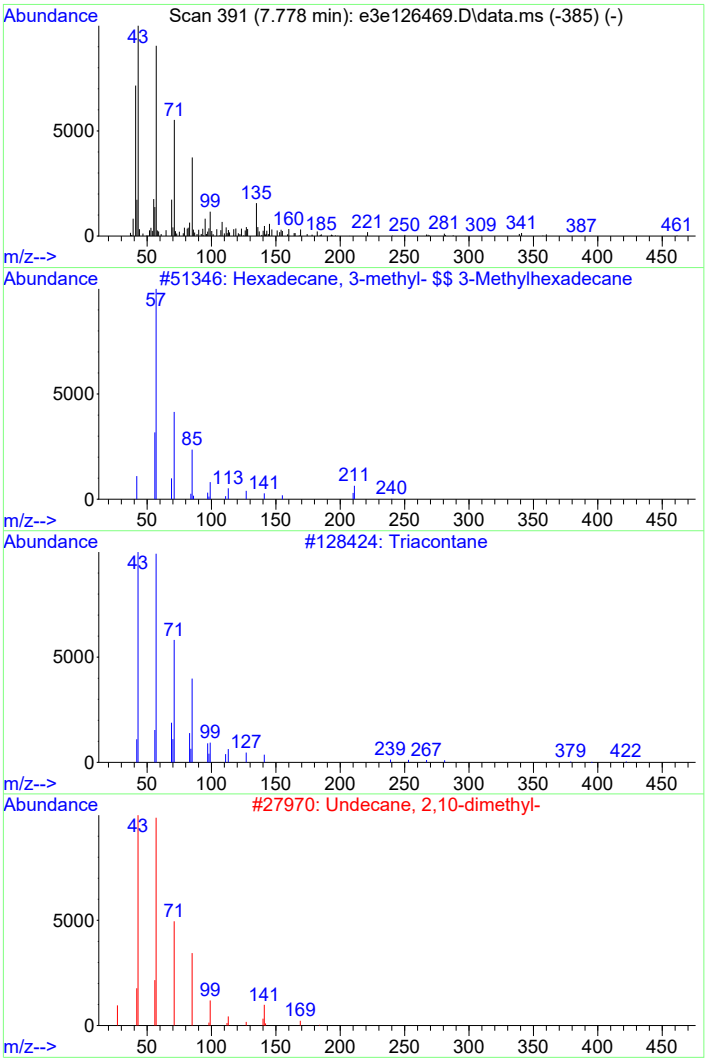
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

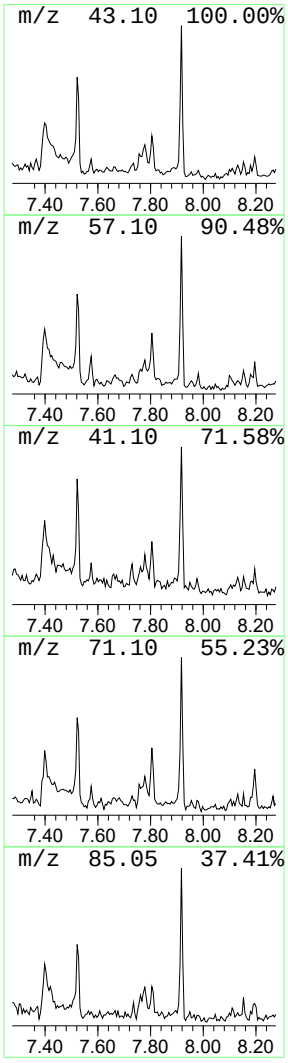
****

Peak Number 8 Alkane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.778	0.00	684490	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecane, 3-methyl- $$ 3-Methy...	240	C17H36	006418-43-5	72
2	Triacontane	422	C30H62	000638-68-6	72
3	Undecane, 2,10-dimethyl-	184	C13H28	017301-27-8	68
4	Heptadecane	240	C17H36	000629-78-7	64
5	Eicosane, 7-hexyl- $$ 7-n-Hexyle...	366	C26H54	055333-99-8	64





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

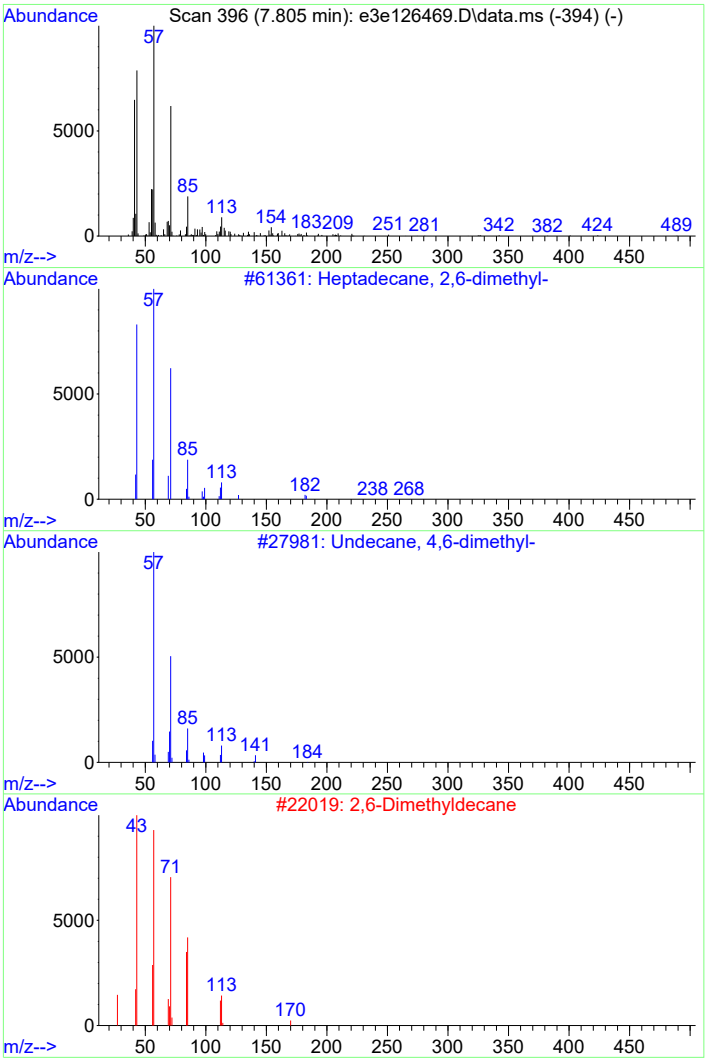
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

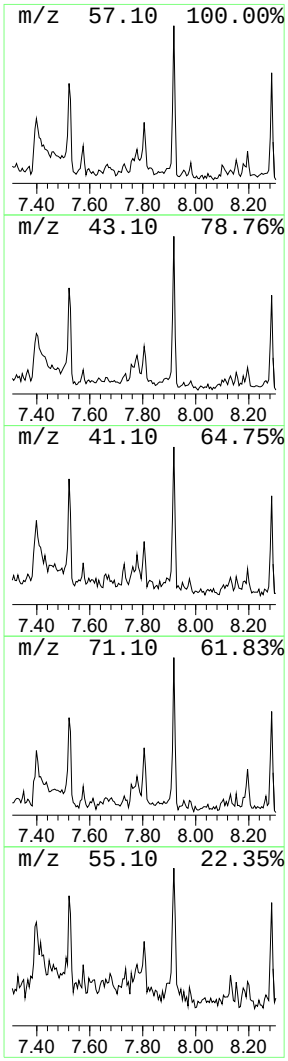
****

Peak Number 9 Alkane Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.805	0.00	556505	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptadecane, 2,6-dimethyl-	268	C19H40	054105-67-8	72
2	Undecane, 4,6-dimethyl-	184	C13H28	017312-82-2	72
3	2,6-Dimethyldecane	170	C12H26	013150-81-7	53
4	Dodecane, 3-methyl- $$ 3-Methyld...	184	C13H28	017312-57-1	50
5	Octane, 3-ethyl- $$ 3-Ethyloctane	142	C10H22	005881-17-4	50





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

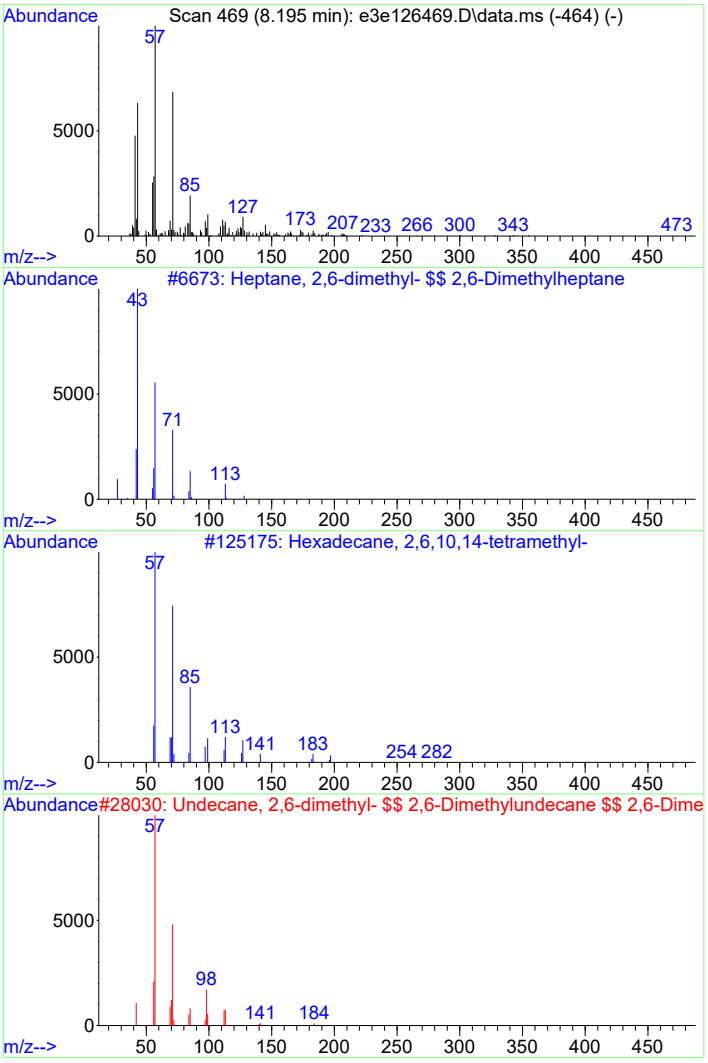
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

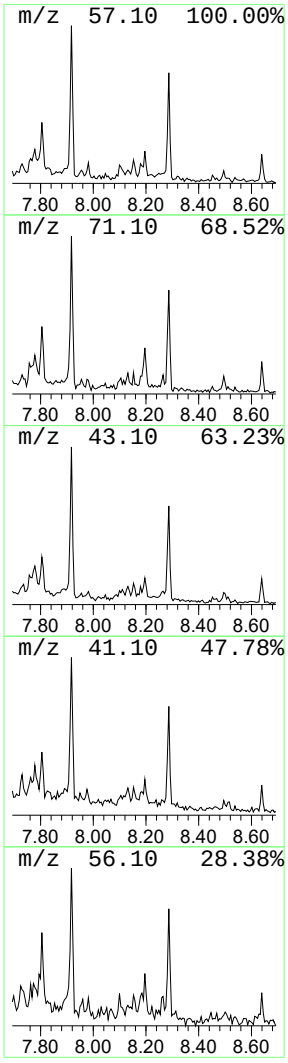
****

Peak Number 10 Alkane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.195	0.00	494738	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 2,6-dimethyl- $$ 2,6-Di...	128	C9H20	001072-05-5	64
2	Hexadecane, 2,6,10,14-tetramethyl-	282	C20H42	000638-36-8	59
3	Undecane, 2,6-dimethyl- $$ 2,6-D...	184	C13H28	017301-23-4	58
4	Dodecane, 2,6,11-trimethyl-	212	C15H32	031295-56-4	53
5	Bacchotricuneatin c	342	C20H22O5	066563-30-2	52





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:43 2025 13

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

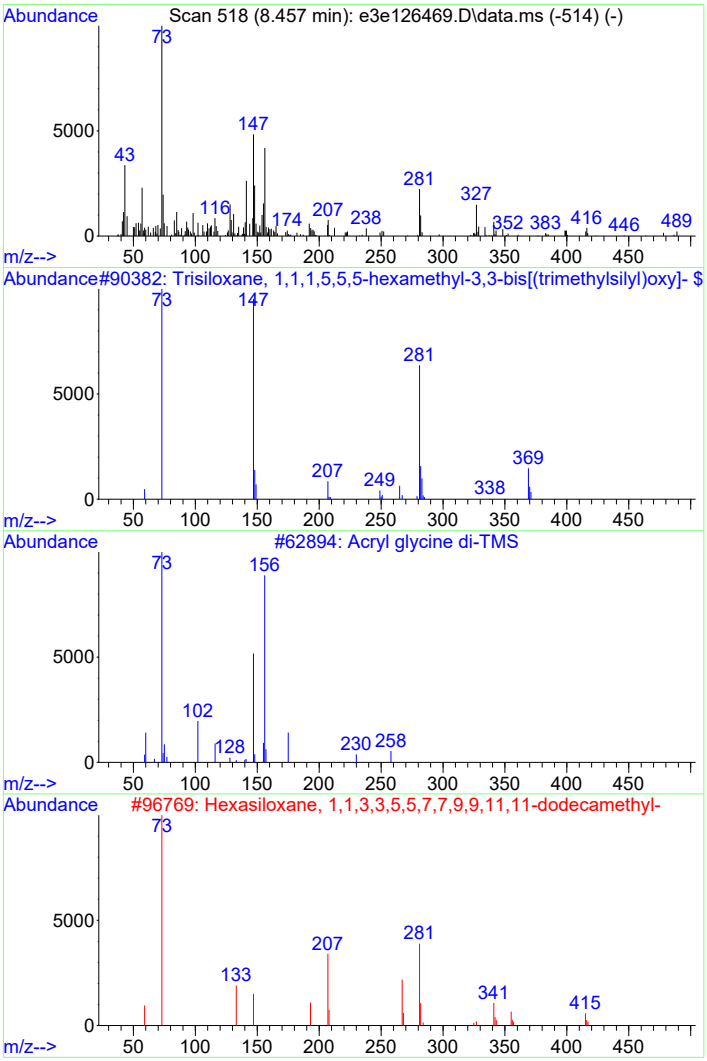
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

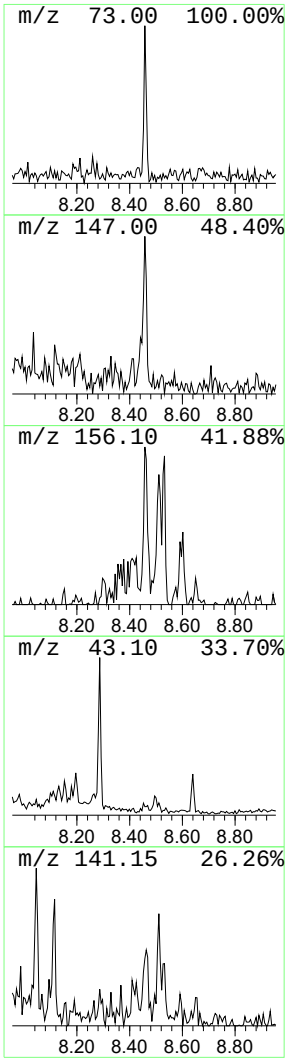
****

Peak Number 12 Siloxane Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.457	0.00	187716	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	23
2	Acryl glycine di-TMS	273	C11H23NO3Si2	000000-00-0	16
3	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	10
4	2-Hexenedioic acid, bis(trimethy...	288	C12H24O4Si2	055494-10-5	10
5	Propanedioic acid, [(trimethylsi...	336	C12H28O5Si3	038165-93-4	10





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:45 2025 14

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

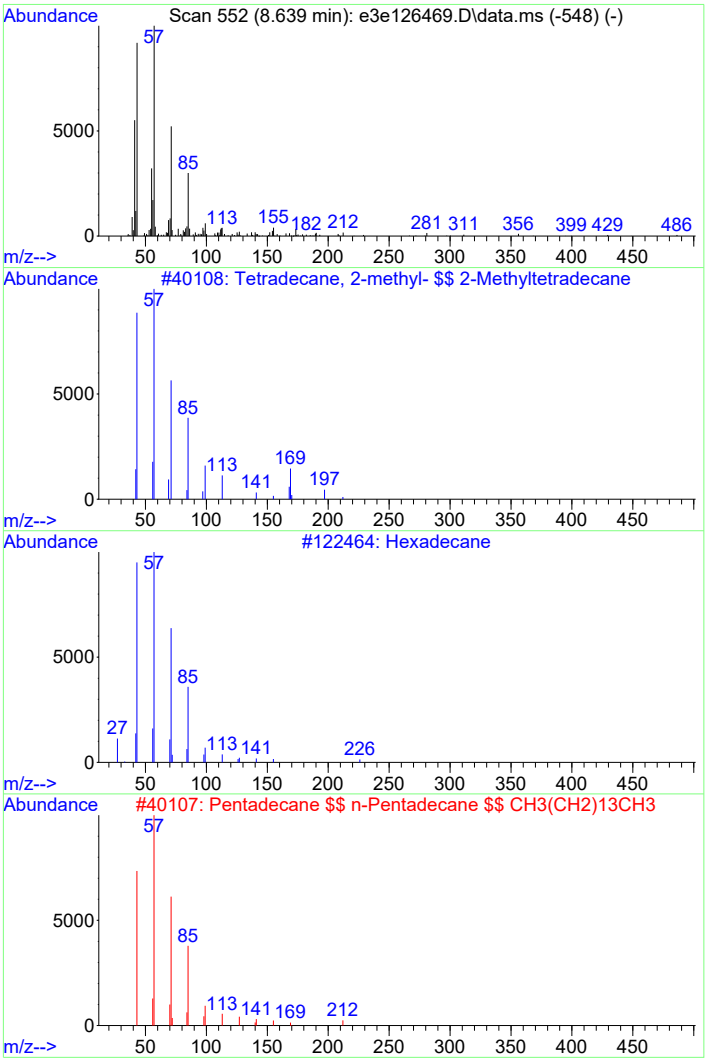
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

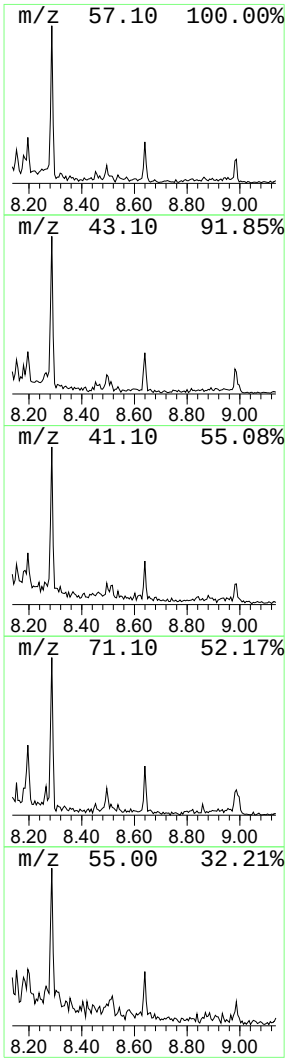
****

Peak Number 13 Alkane Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.639	0.00	268086	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetradecane, 2-methyl- $$ 2-Meth...	212	C15H32	001560-95-8	81
2	Hexadecane	226	C16H34	000544-76-3	80
3	Pentadecane $$ n-Pentadecane $$ ...	212	C15H32	000629-62-9	76
4	Pentadecane	212	C15H32	000629-62-9	74
5	Tetradecane, 1-iodo- $$ Tetradec...	324	C14H29I	019218-94-1	72





AECOM_e3g_TPHEXT.M Wed Jan 01 07:12:46 2025 15

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

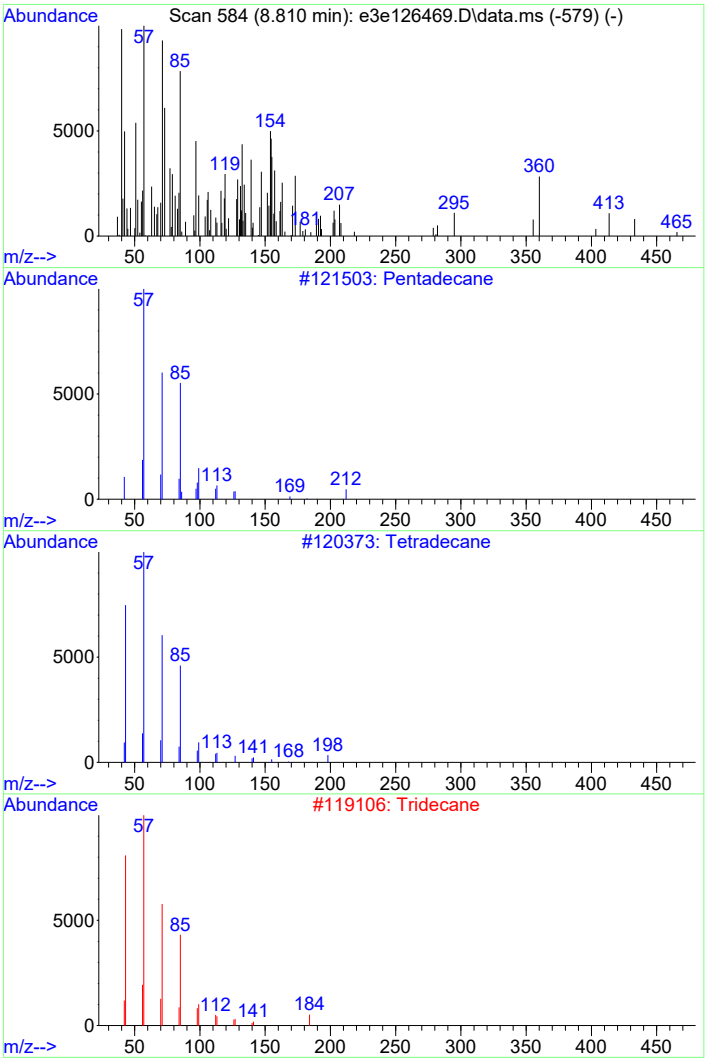
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

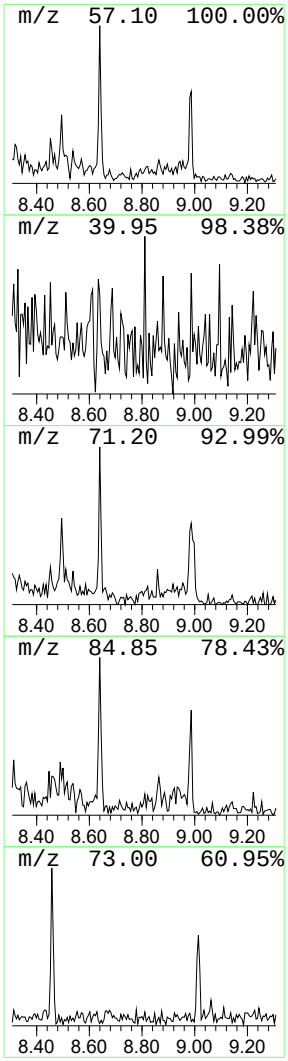
****

Peak Number 15 Alkane Concentration Rank 52

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.810	0.00	29260	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentadecane	212	C15H32	000629-62-9	22
2	Tetradecane	198	C14H30	000629-59-4	22
3	Tridecane	184	C13H28	000629-50-5	22
4	Octadecane $$ n-Octadecane $$ Oc...	254	C18H38	000593-45-3	22
5	Undecane	156	C11H24	001120-21-4	22





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Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

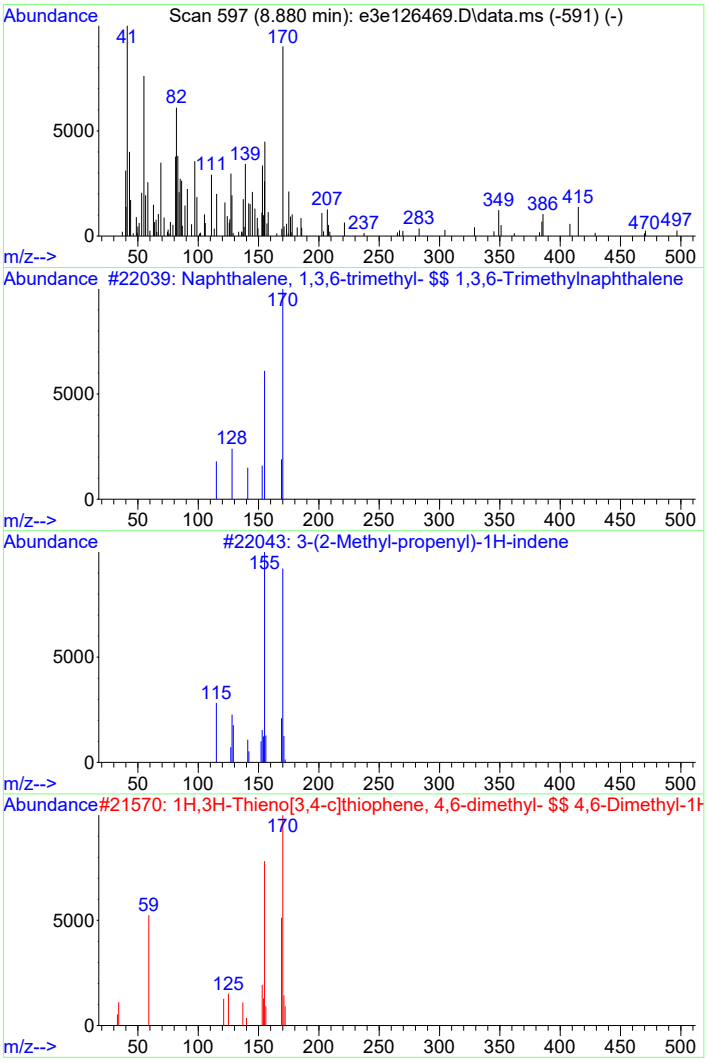
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

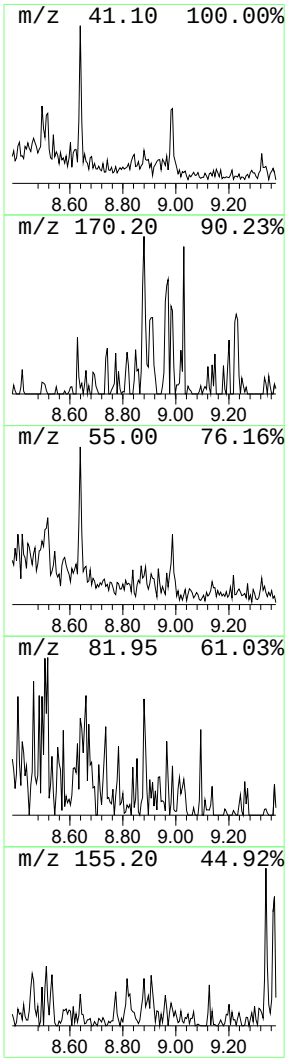
****

Peak Number 16 Naphthalene, 1,3,6-trimethyl- Concentration Rank 40

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.880	0.00	69448	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Naphthalene, 1,3,6-trimethyl- $$...	170	C13H14	003031-08-1	38
2	3-(2-Methyl-propenyl)-1H-indene	170	C13H14	134261-85-1	38
3	1H,3H-Thieno[3,4-c]thiophene, 4,...	170	C8H10S2	015441-54-0	38
4	4,6,8-Trimethylazulene $$ Azulen...	170	C13H14	000941-81-1	37
5	Naphthalene, 1,4,6-trimethyl- $$...	170	C13H14	002131-42-2	32





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Acq On    : 31 Dec 2024  10:49 am
Operator  : (b) (6)
Sample    : OP60630-BS, JP5
Misc      : op60630,e3e5885,1,,,1,1
ALS Vial  : 3   Sample Multiplier: 1

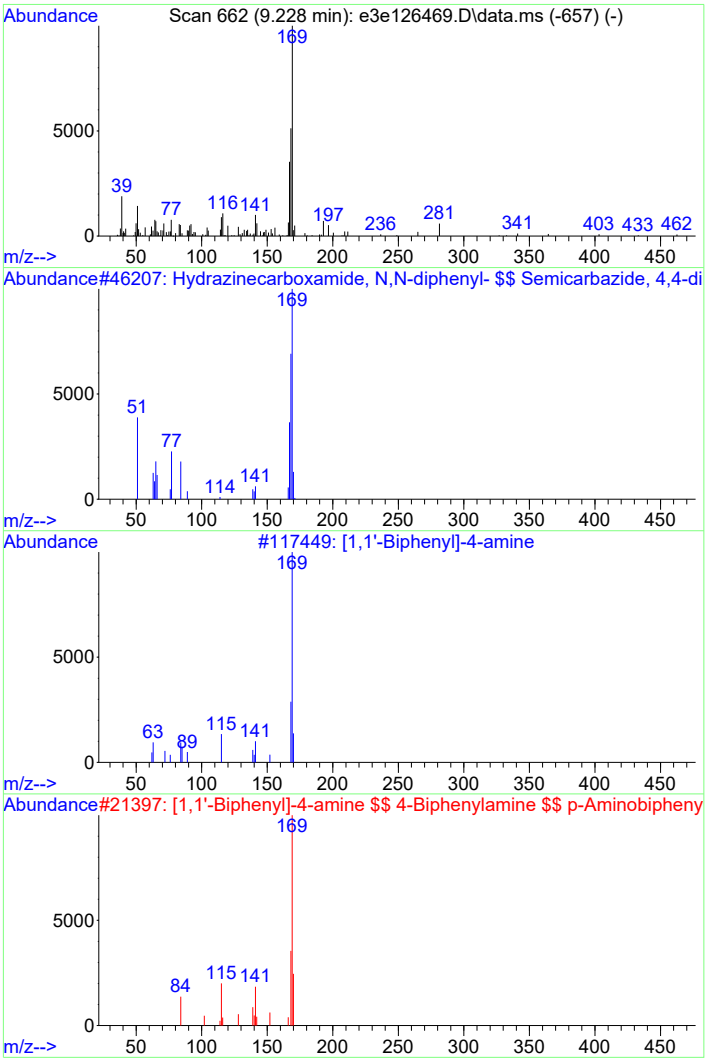
Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

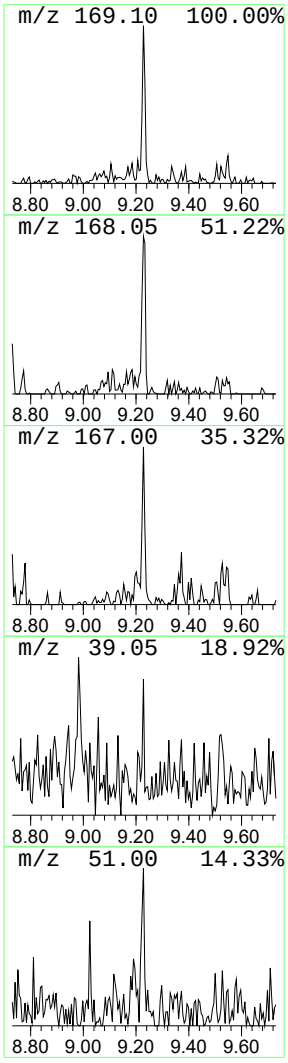
TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

**********************************************************************
Peak Number 19  Diphenylamine                    Concentration Rank 32
```

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.228	0.00	105201	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hydrazinecarboxamide, N,N-diphen...	227	C13H13N3O	000603-51-0	50
2	[1,1'-Biphenyl]-4-amine	169	C12H11N	000092-67-1	47
3	[1,1'-Biphenyl]-4-amine $$ 4-Bip...	169	C12H11N	000092-67-1	47
4	Diphenylamine $$ Benzenamine, N-...	169	C12H11N	000122-39-4	42
5	Diphenylamine	169	C12H11N	000122-39-4	42





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

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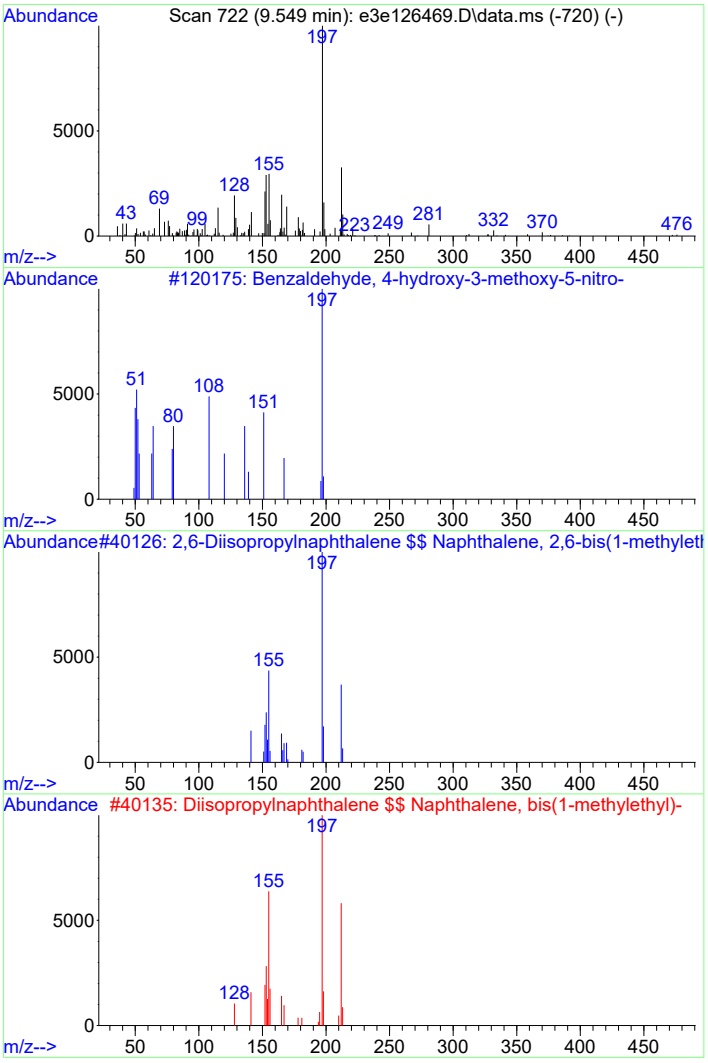
Quant Title : 8270C Calibration

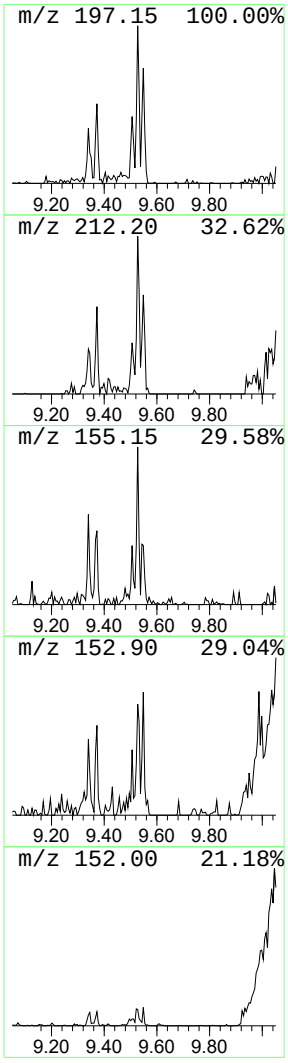
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 24 Benzaldehyde, 4-hydroxy-3-m... Concentration Rank 24

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.549	0.00	137268	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzaldehyde, 4-hydroxy-3-methox...	197	C8H7NO5	006635-20-7	80
2	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	68
3	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	50
4	Diisopropylnaphthalene	212	C16H20	038640-62-9	43
5	1-Tert-butyl-1-(naphtyl-1)-1-sil...	254	C17H22Si	093241-91-9	38





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Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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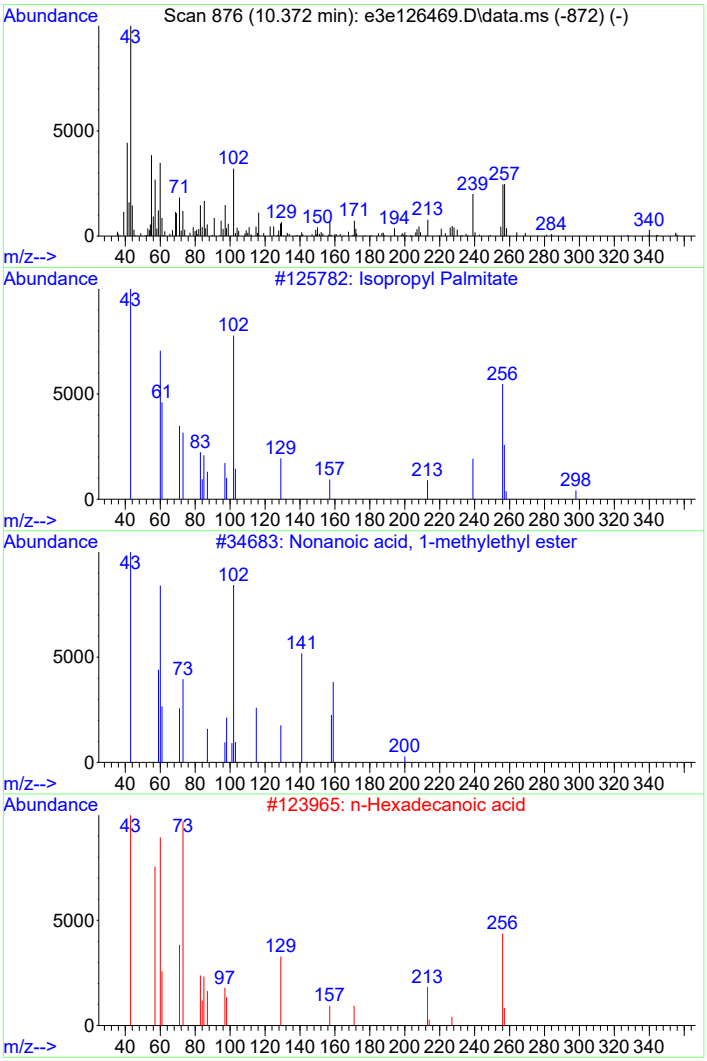
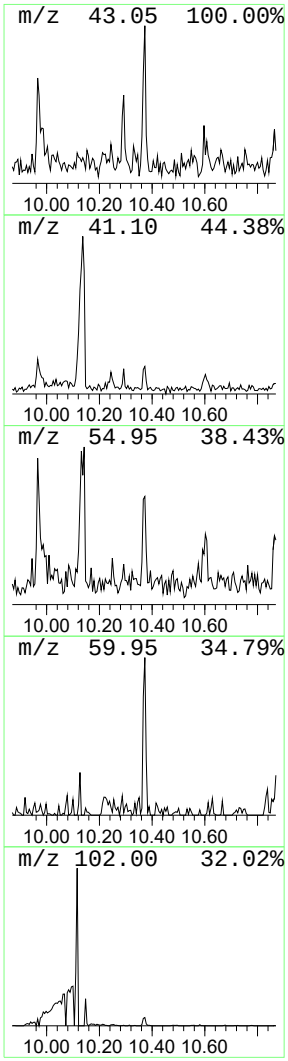
Peak Number 27 Isopropyl Palmitate Concentration Rank 23

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.372	0.00	143630	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Isopropyl Palmitate	298	C19H38O2	000142-91-6	50
2	Nonanoic acid, 1-methylethyl ester	200	C12H24O2	000000-00-0	12
3	n-Hexadecanoic acid	256	C16H32O2	000057-10-3	12
4	2H-Pyran-2-one, 4-(acetyloxy)-6-...	256	C15H12O4	092496-95-2	10
5	n-Capric acid isopropyl ester $$...	214	C13H26O2	002311-59-3	10





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(b) (4)

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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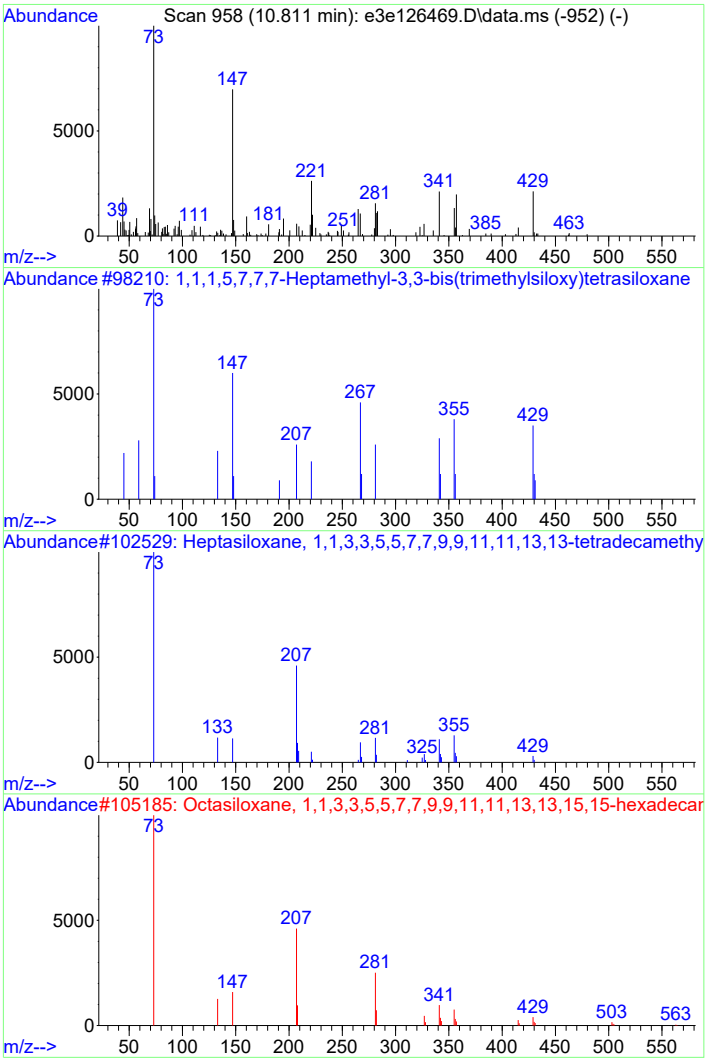
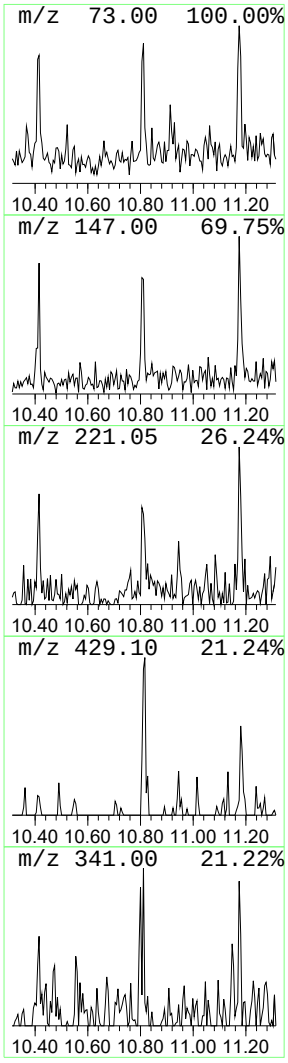
Peak Number 33 Siloxane Concentration Rank 41

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.811	0.00	69437	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	17
2	Heptasiloxane, 1,1,3,3,5,5,7,7,9...	504	C14H44O6Si7	019095-23-9	12
3	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	10
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	10
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	10





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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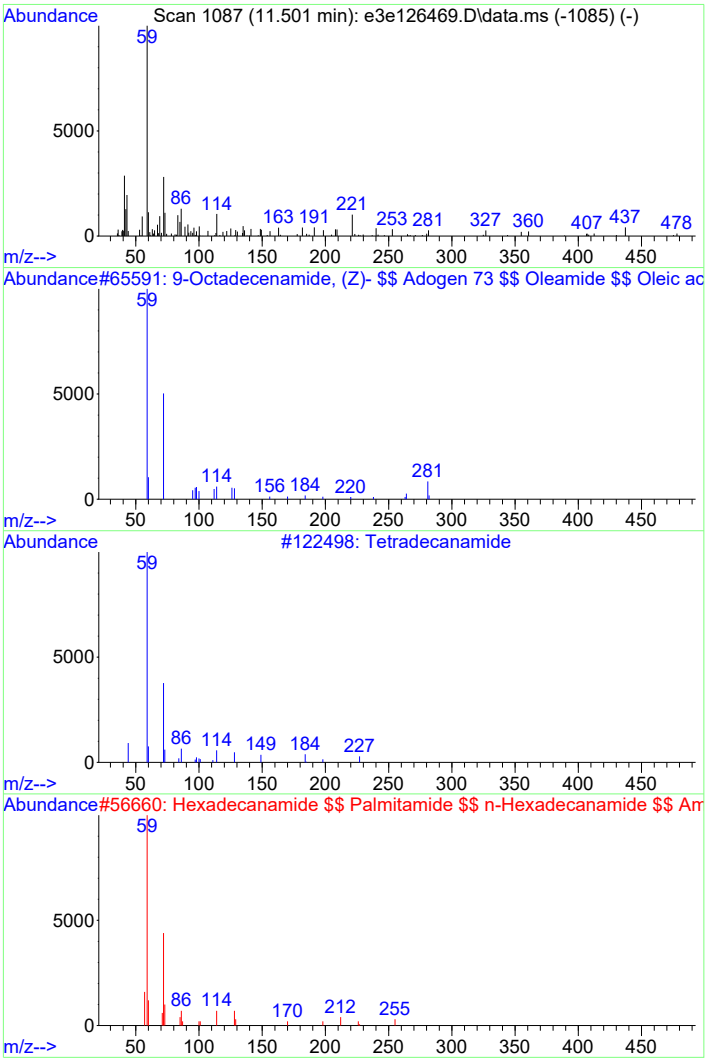
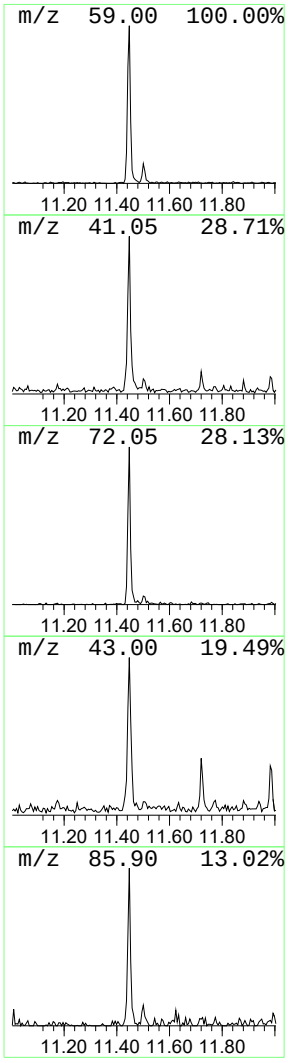
Peak Number 39 9-Octadecenamide, Concentration Rank 43

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.501	0.00	57013	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9-Octadecenamide, (Z)- $$ Adogen...	281	C18H35NO	000301-02-0	53
2	Tetradecanamide	227	C14H29NO	000638-58-4	42
3	Hexadecanamide $$ Palmitamide $$...	255	C16H33NO	000629-54-9	40
4	Tetradecanamide $$ Myristamide $...	227	C14H29NO	000638-58-4	40
5	Dodecanamide $$ Lauramide $$ Ami...	199	C12H25NO	001120-16-7	40





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Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

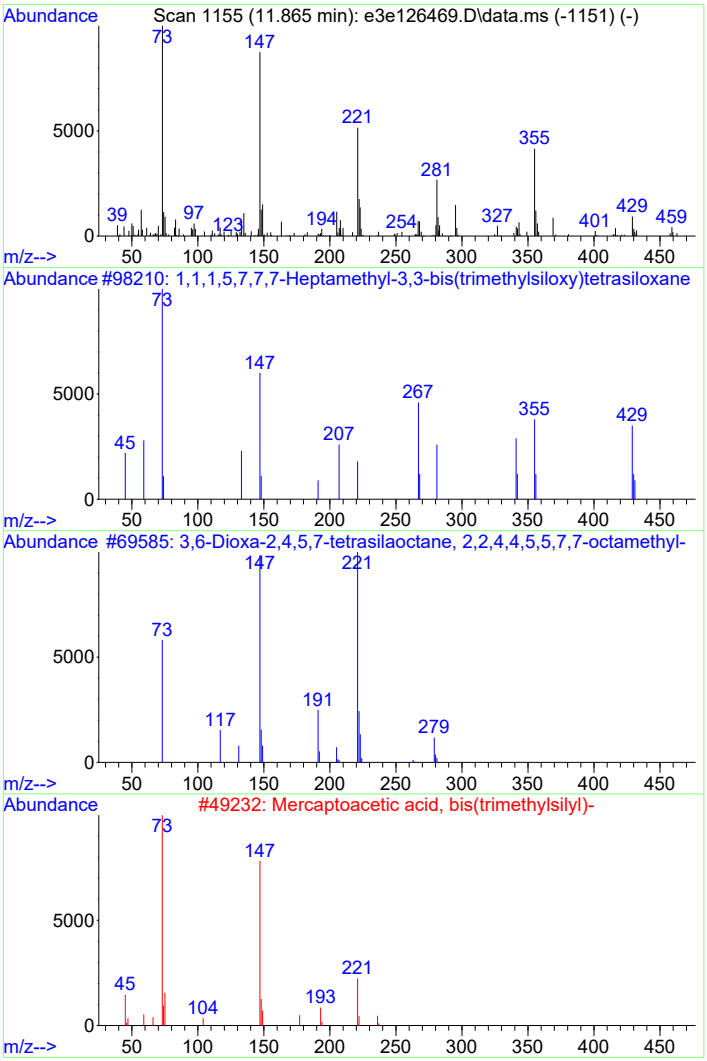
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

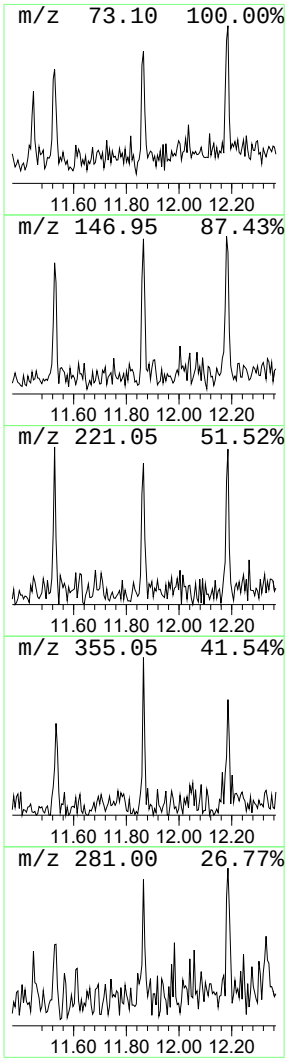
****

Peak Number 42 Siloxane Concentration Rank 27

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.865	0.00	118150	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	53
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	25
4	Nickel, bis(N,N,N'-trimethyl-o-p...	356	C18H26N4Ni	000000-00-0	25
5	N-(Trifluoroacetyl)-N,O,O',O''-t...	553	C22H42F3NO4Si4	000000-00-0	10





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Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

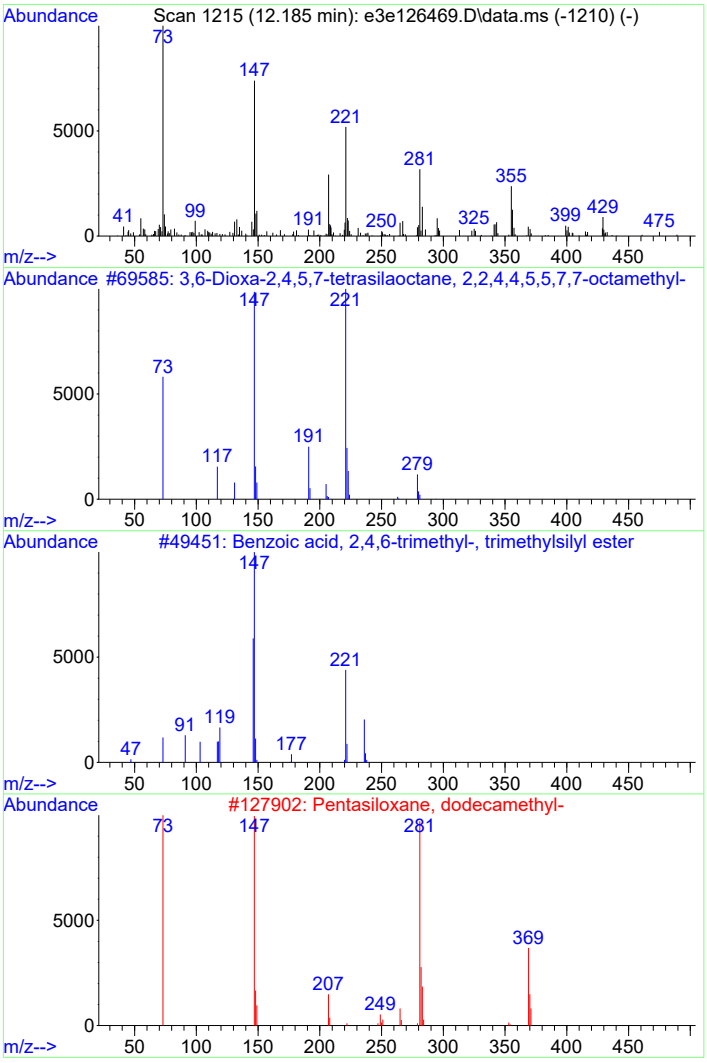
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

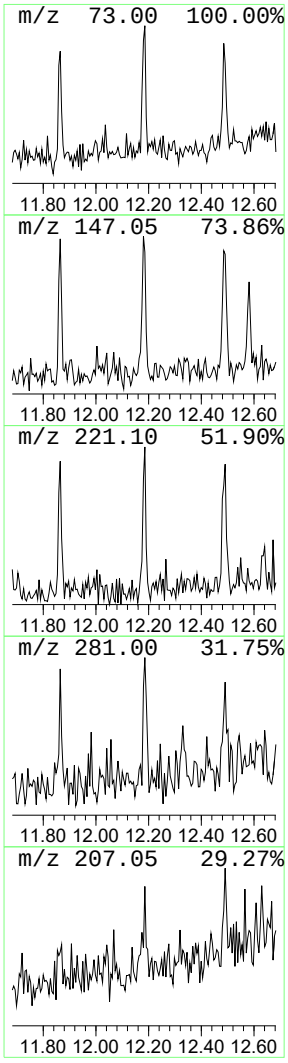
****

Peak Number 44 Siloxane Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.185	0.00	158554	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
2	Benzoic acid, 2,4,6-trimethyl-, ...	236	C13H20O2Si	070079-88-8	37
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	32
4	Ethanedioic acid, bis(trimethyls...	234	C8H18O4Si2	018294-04-7	27
5	3,4-Dimethyl-1-pentamethyldisily...	258	C13H30OSi2	000000-00-0	25





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Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Acq On    : 31 Dec 2024  10:49 am
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Sample    : OP60630-BS, JP5
Misc      : op60630,e3e5885,1,,,1,1
ALS Vial  : 3   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

**********************************************************************
Peak Number 45  Alkane                          Concentration Rank 35
```
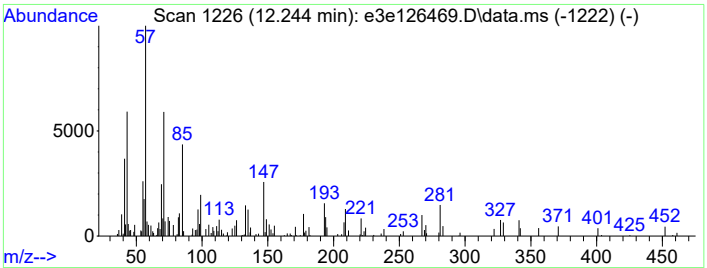
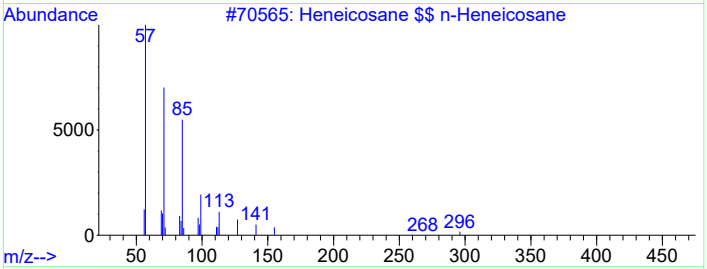
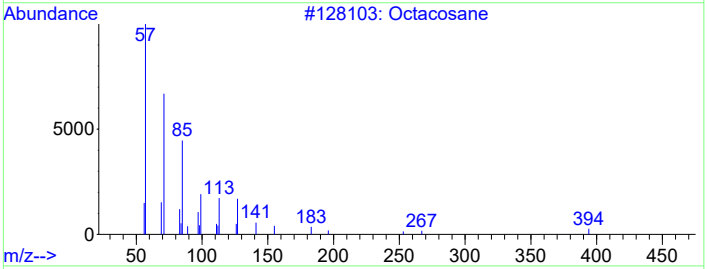
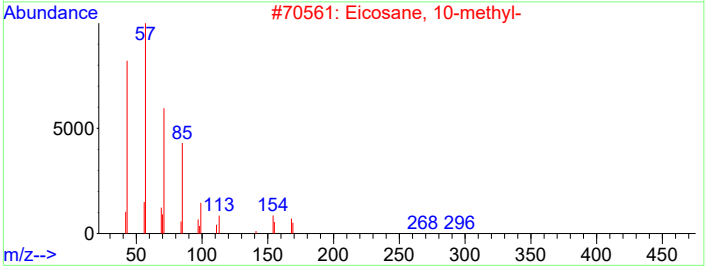

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.244	0.00	90702	External Standard	0.000

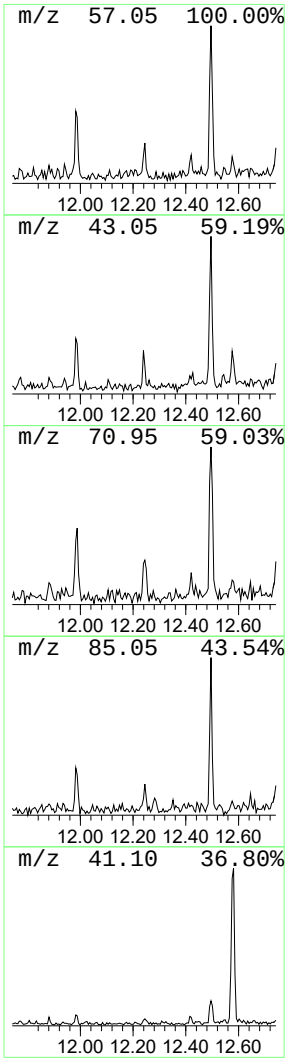
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heneicosane $$ n-Heneicosane	296	C21H44	000629-94-7	60
2	Octacosane	394	C28H58	000630-02-4	52
3	Eicosane, 10-methyl-	296	C21H44	054833-23-7	50
4	Tetracosane	338	C24H50	000646-31-1	50
5	Hexadecane	226	C16H34	000544-76-3	47











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Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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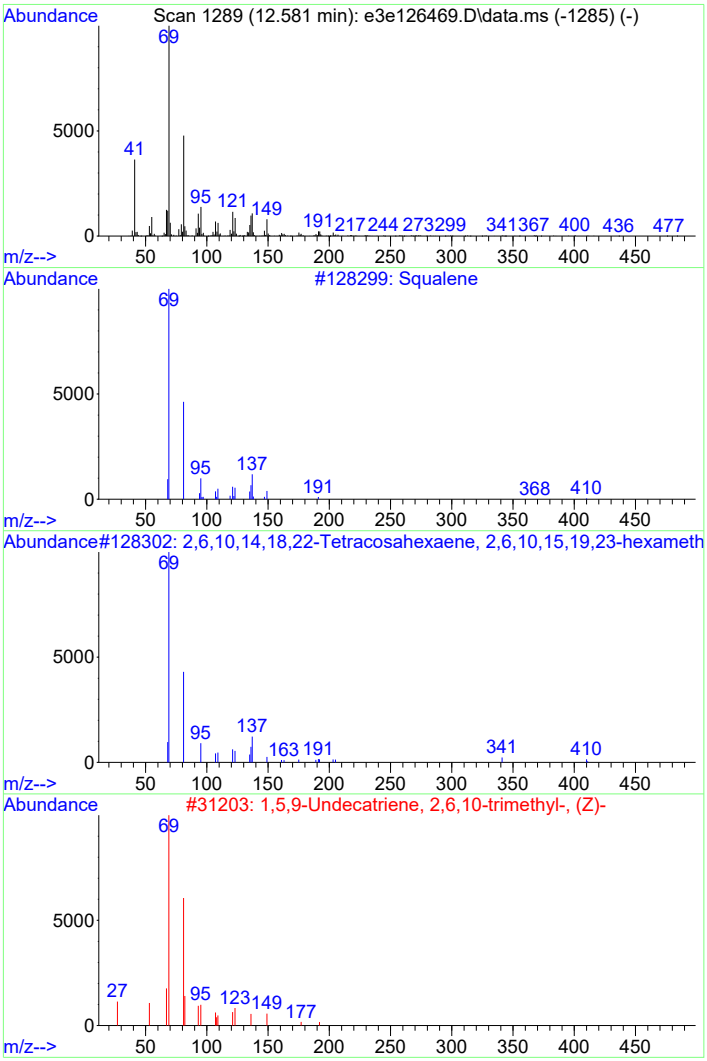
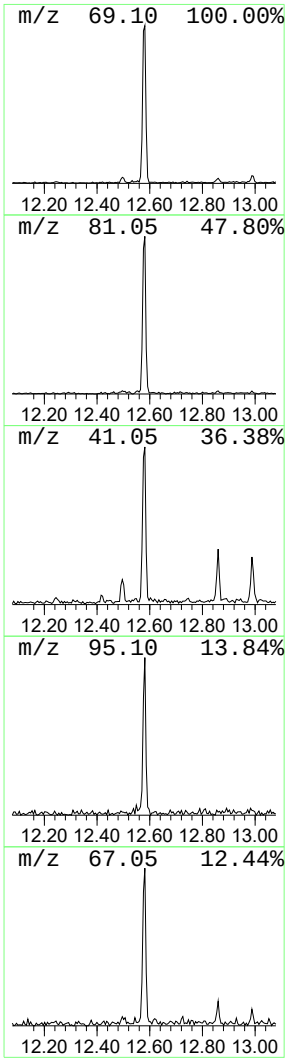
Peak Number 48 Squalene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.581	0.00	1614500	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Squalene	410	C30H50	007683-64-9	95
2	2,6,10,14,18,22-Tetracosahexaene...	410	C30H50	000111-02-4	91
3	1,5,9-Undecatriene, 2,6,10-trime...	192	C14H24	062951-96-6	86
4	4,9,13,17-Tetramethyl-4,8,12,16-...	316	C22H36O	056882-09-8	83
5	Docosa-2,6,10,14,18-pentaen-22-a...	384	C27H44O	000000-00-0	83





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Appendix C. Tier 1 Analysis Tech Memos

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TIC Integration Parameters: RTEINT.P

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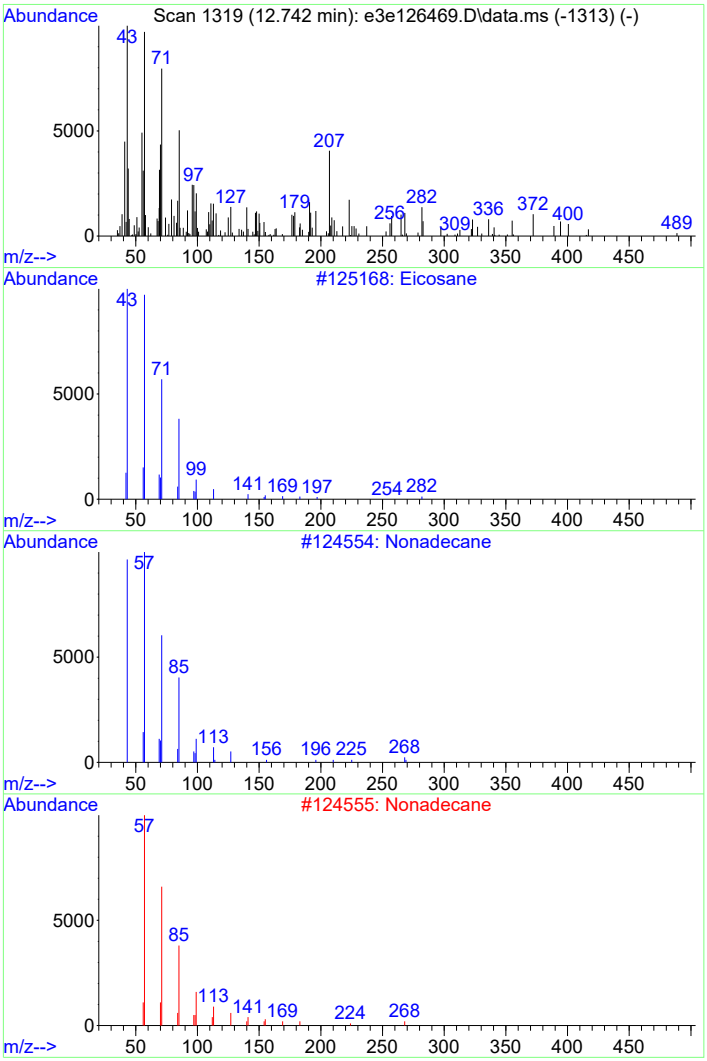
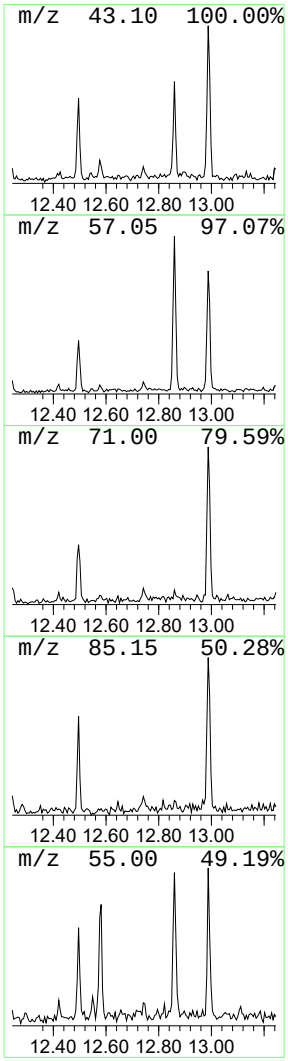
Peak Number 49 Alkane Concentration Rank 31

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.742	0.00	107562	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane	282	C20H42	000112-95-8	60
2	Nonadecane	268	C19H40	000629-92-5	60
3	Nonadecane	268	C19H40	000629-92-5	55
4	Eicosane	282	C20H42	000112-95-8	53
5	Eicosane $$ n-Eicosane	282	C20H42	000112-95-8	53





AECOM_e3g_TPHEXT.M Wed Jan 01 07:13:02 2025 Page: 27

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

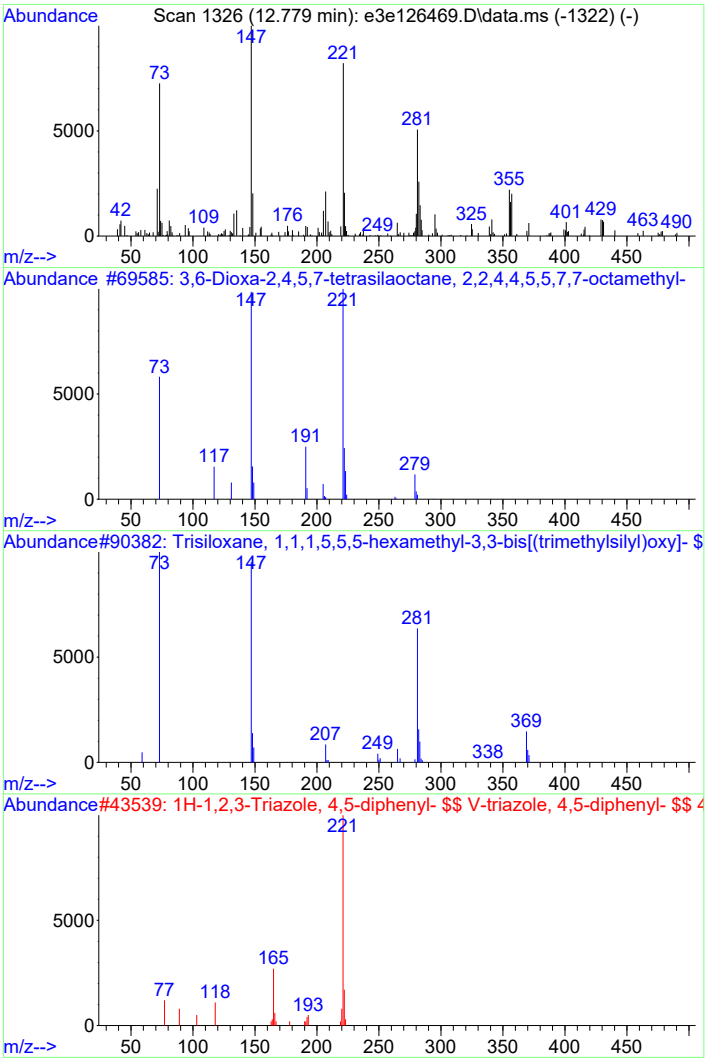
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

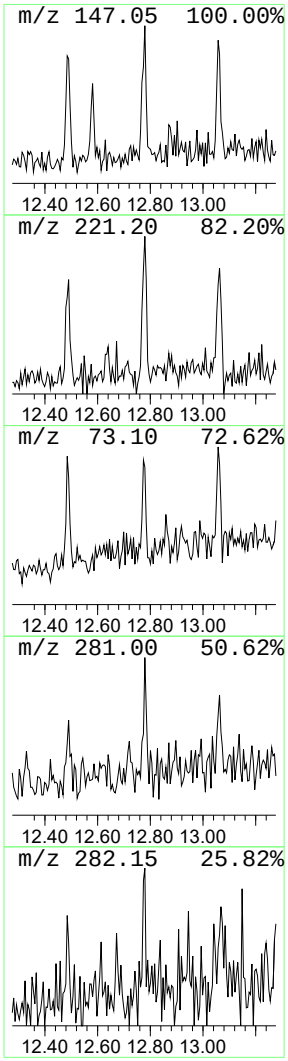
****

Peak Number 50 Siloxane Concentration Rank 25

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.779	0.00	131881	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25
3	1H-1,2,3-Triazole, 4,5-diphenyl-...	221	C14H11N3	005533-73-3	14
4	1H-Quinolin-2-one, 3-phenyl-	221	C15H11NO	038035-81-3	14
5	Tris(trimethylsilyl)borate $$ Si...	278	C9H27BO3Si3	004325-85-3	12





AECOM_e3g_TPHEXT.M Wed Jan 01 07:13:03 2025 28

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

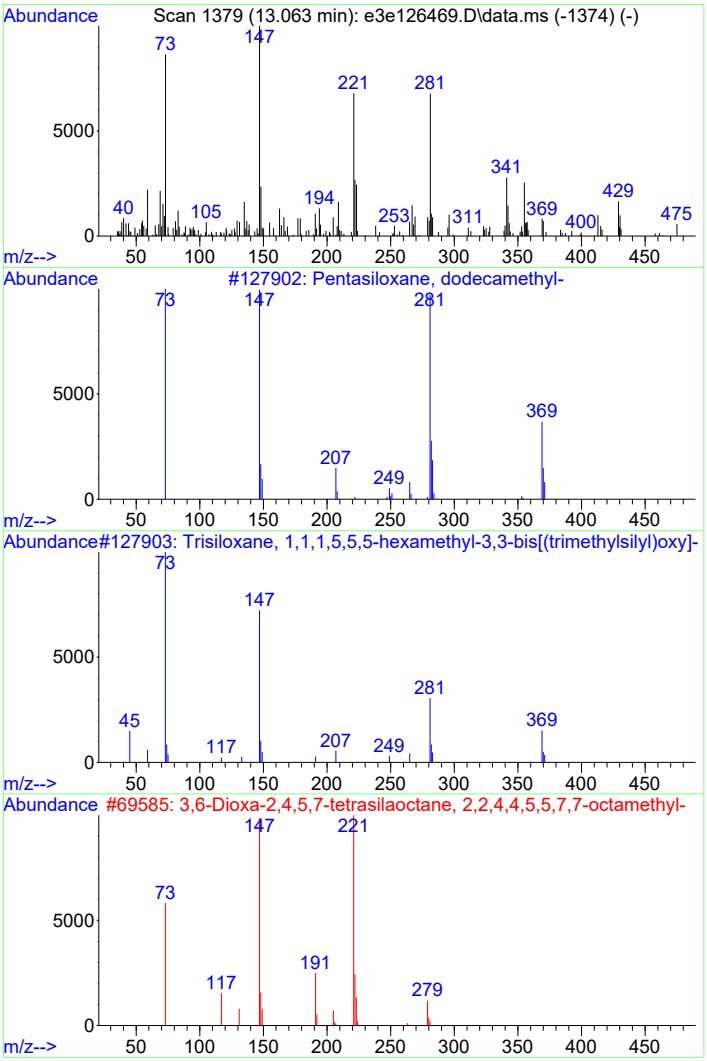
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

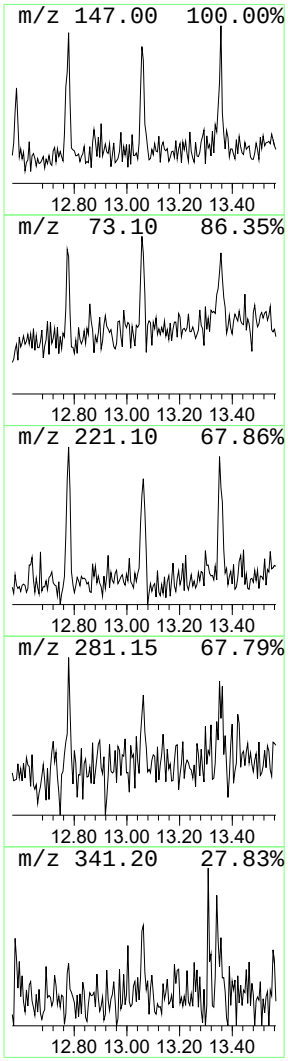
****

Peak Number 52 Siloxane Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.063	0.00	174221	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25
3	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	16
4	Propanoic acid, 2-oxo-3-(trimeth...	232	C9H20O3Si2	055887-51-9	14
5	Silane, [(1-methyl-1,3-propanedi...	234	C10H26O2Si2	056771-47-2	14





AECOM_e3g_TPHEXT.M Wed Jan 01 07:13:05 2025 29

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

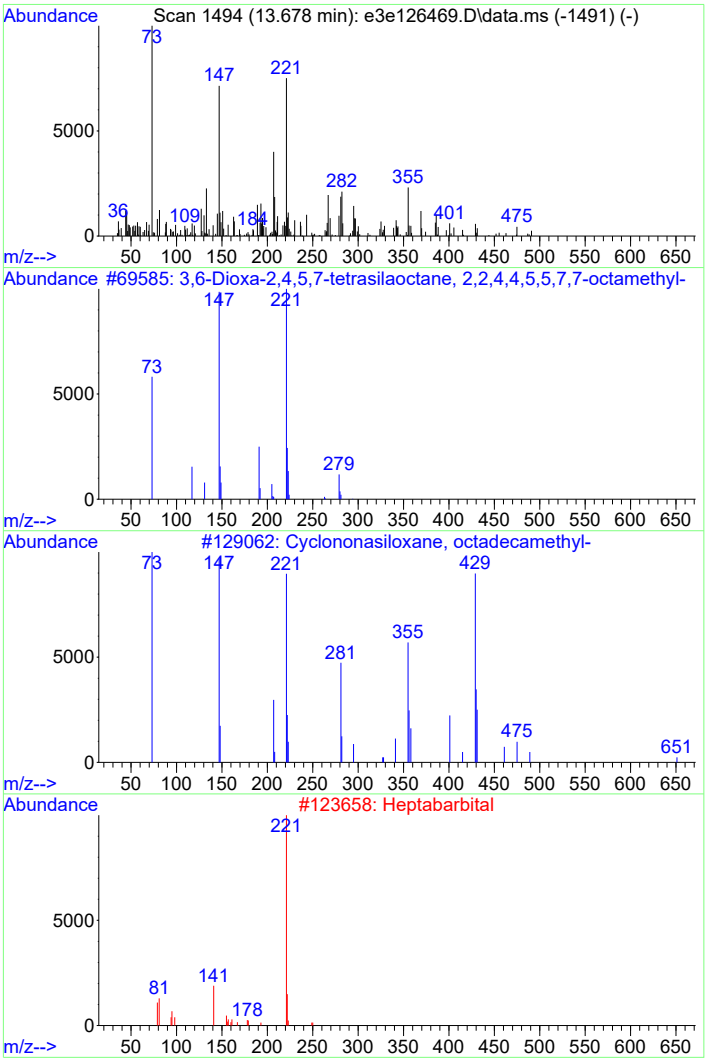
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

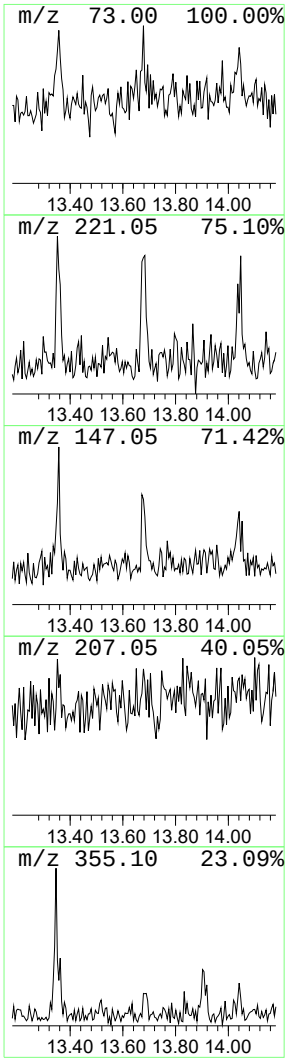
****

Peak Number 55 Siloxane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.678	0.00	236590	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	32
2	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	27
3	Heptabarbital	250	C13H18N2O3	000509-86-4	25
4	Indole, 3-benzoyl- $$ Methanone,...	221	C15H11NO	015224-25-6	22
5	1,3,5-Triazine-2,4-diamine, 6-(2...	221	C9H8ClN5	029366-77-6	22





AECOM_e3g_TPHEXT.M Wed Jan 01 07:13:06 2025 Page: 30

Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data Path : C:\Users\(b) (6)          \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On    : 31 Dec 2024  10:49 am
Operator  : (b) (6)
Sample    : OP60630-BS, JP5
Misc      : op60630,e3e5885,1,,,1,1
ALS Vial  : 3   Sample Multiplier: 1

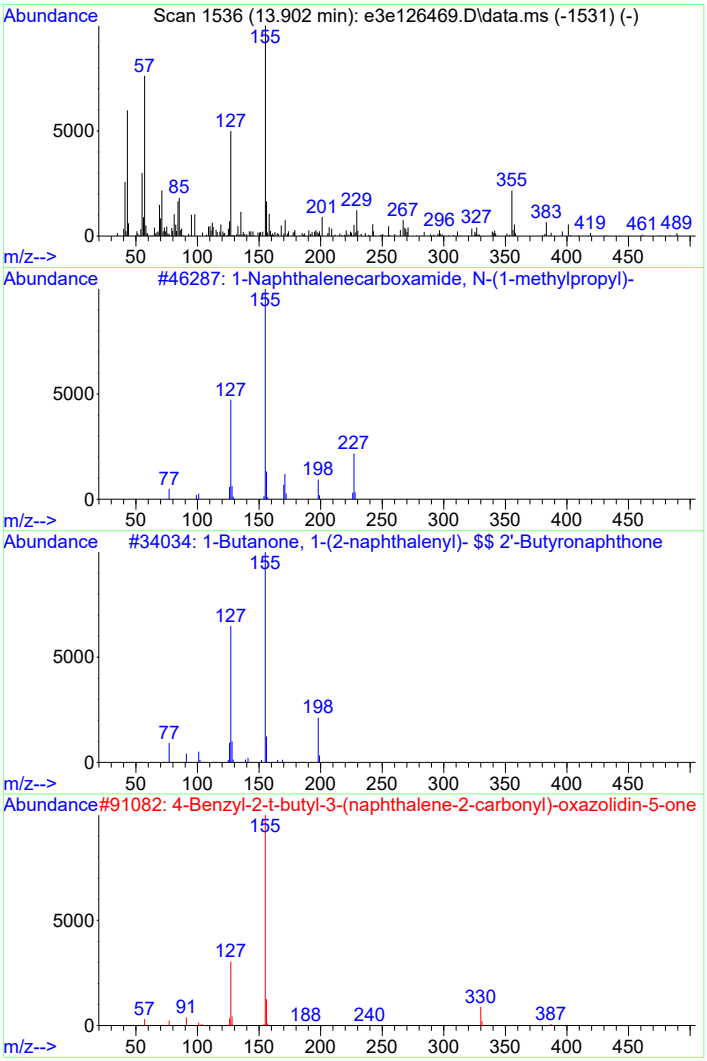
Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

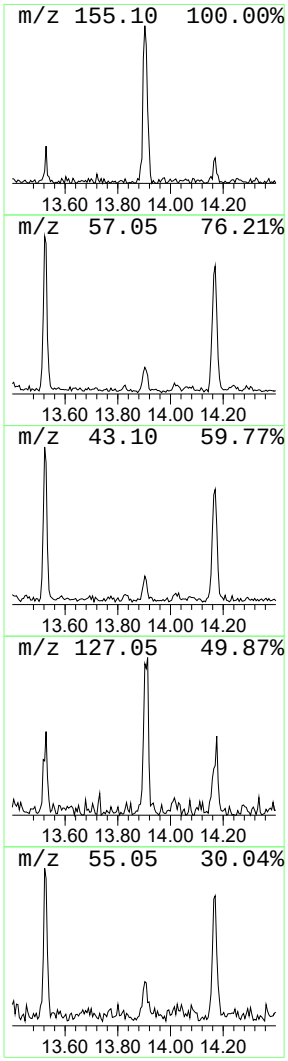
TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

**********************************************************************
Peak Number 57  1-Naphthalenecarboxamide, N...  Concentration Rank  9
```

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.902	0.00	409172	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1-Naphthalenecarboxamide, N-(1-m...	227	C15H17NO	031609-18-4	59
2	1-Butanone, 1-(2-naphthalenyl)- ...	198	C14H14O	017666-88-5	59
3	4-Benzyl-2-t-butyl-3-(naphthalen...	387	C25H25NO3	000000-00-0	47
4	Phenylpropionic acid, .alpha.-am...	229	C10H12FNO4	000000-00-0	45
5	1-Butanone, 1-(2-naphthalenyl)-	198	C14H14O	017666-88-5	38





AECOM_e3g_TPHEXT.M Wed Jan 01 07:13:07 2025 31

Appendix C. Tier 1 Analysis Tech Memos

Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\
Data File : e3e126469.D
Acq On : 31 Dec 2024 10:49 am
Operator : (b) (6)
Sample : OP60630-BS, JP5
Misc : op60630,e3e5885,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

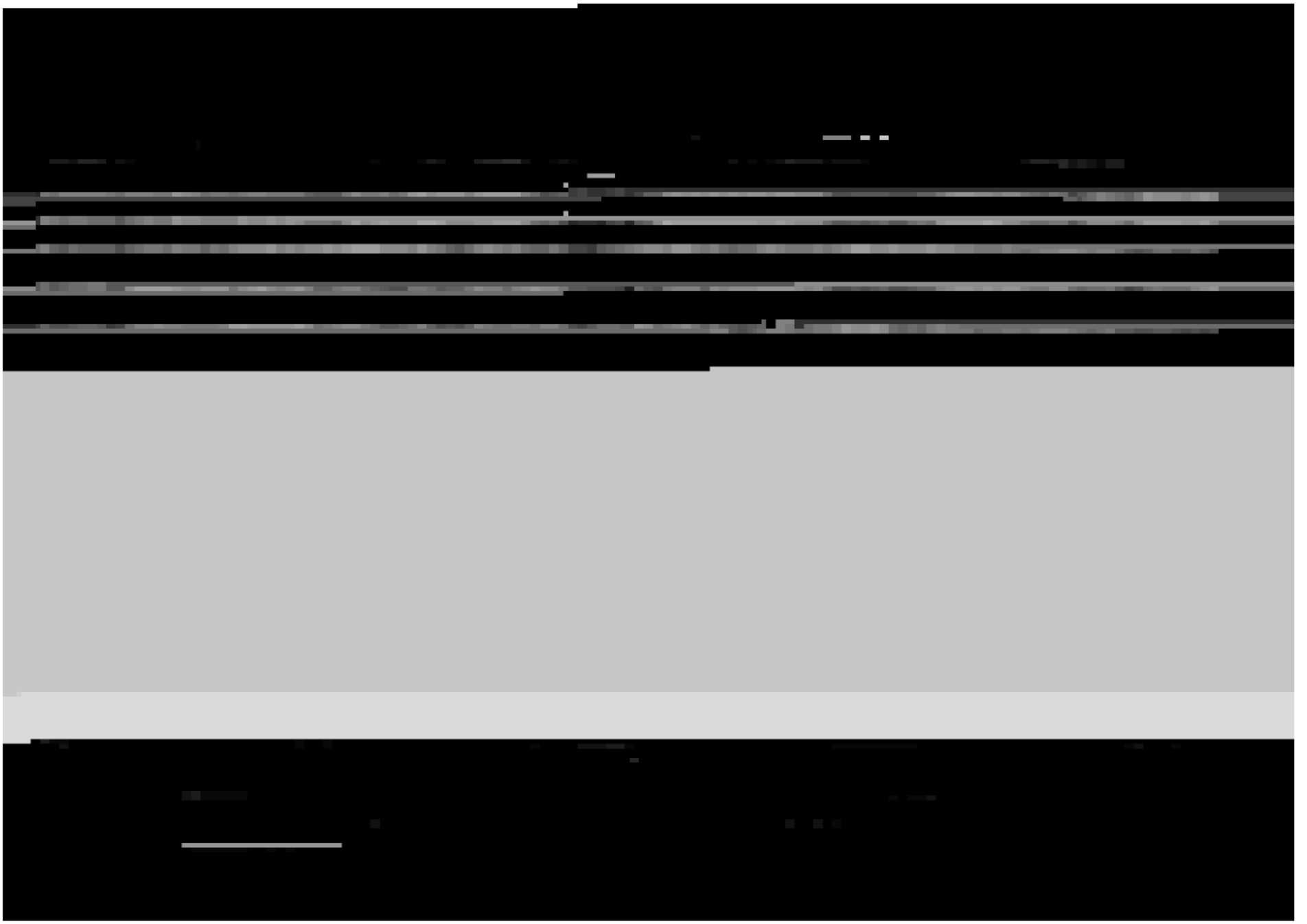
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard		
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Alkane	6.837	0.0		893600	0	0.000	1	1.0
Cyclooctene, 1,...	6.912	0.0		189643	0	0.000	1	1.0
Alkane	7.072	0.0		481602	0	0.000	1	1.0
Cyclopentasilox...	7.190	0.0		192096	0	0.000	1	1.0
Benzene, 1,2,4,...	7.291	0.0		156759	0	0.000	1	1.0
n-Decaldehyde	7.730	0.0		248892	0	0.000	1	1.0
Alkane	7.778	0.0		684490	0	0.000	1	1.0
Alkane	7.805	0.0		556505	0	0.000	1	1.0
Alkane	8.195	0.0		494738	0	0.000	1	1.0
Siloxane	8.457	0.0		187716	0	0.000	1	1.0
Alkane	8.639	0.0		268086	0	0.000	1	1.0
Alkane	8.810	0.0		29260	0	0.000	1	1.0
Naphthalene, 1,...	8.880	0.0		69448	0	0.000	1	1.0
Diphenylamine	9.228	0.0		105201	0	0.000	1	1.0
Benzaldehyde, 4...	9.549	0.0		137268	0	0.000	1	1.0
Isopropyl Palmi...	10.372	0.0		143630	0	0.000	1	1.0
Siloxane	10.811	0.0		69437	0	0.000	1	1.0
9-Octadecenamide,	11.501	0.0		57013	0	0.000	1	1.0
Siloxane	11.865	0.0		118150	0	0.000	1	1.0
Siloxane	12.185	0.0		158554	0	0.000	1	1.0
Alkane	12.244	0.0		90702	0	0.000	1	1.0
Squalene	12.581	0.0		1614500	0	0.000	1	1.0
Alkane	12.742	0.0		107562	0	0.000	1	1.0
Siloxane	12.779	0.0		131881	0	0.000	1	1.0
Siloxane	13.063	0.0		174221	0	0.000	1	1.0
Siloxane	13.678	0.0		236590	0	0.000	1	1.0
1-Naphthaleneca...	13.902	0.0		409172	0	0.000	1	1.0

(b) (4)

Sample Prep Log OP60630 page 1 of 1



(b) (4)

DA69622T

Appendix C. Tier 1 Analysis Tech Memos

Attachment 5: (b) (4) Laboratory Report L2476242

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2476242
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	CTO24F0139
Project Number:	60729369.00.46.01
Report Date:	01/06/25

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476242
Report Date: 01/06/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2476242-01	D3-DL-0017730-24336-N	WATER	HONOLULU, HI	12/24/24 10:32	12/28/24
L2476242-02	D3-DL-0017730-24336-3-N	WATER	HONOLULU, HI	12/24/24 10:37	12/28/24

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2476242
Project Number:	60729369.00.46.01	**Report Date:**	01/06/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2476242
Project Number:	60729369.00.46.01	**Report Date:**	01/06/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 01/06/25

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/30/24 23:01
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	96		70-130

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/31/24 00:11
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	96		70-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)		for sample(s):	01-02	Batch:	WG2015223-5
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476242
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2015223-3 WG2015223-4								
1-Pentene	56		57		50-130	2		30
Pentane	58		56		50-130	4		30
Tertiary Butanol	85		82		50-130	4		30
Cyclopentane	65		68		50-130	5		30
2-Methylpentane	63		65		50-130	3		30
Methyl tert butyl ether	90		85		50-130	6		30
3-Methylpentane	70		70		50-130	0		30
1-Hexene	70		70		50-130	0		30
n-Hexane	67		68		50-130	1		30
Isopropyl Ether	85		81		50-130	5		30
Ethyl-Tert-Butyl-Ether	86		83		50-130	4		30
Methylcyclopentane	70		70		50-130	0		30
2,4-Dimethylpentane	72		72		50-130	0		30
Cyclohexane	72		72		50-130	0		30
2-Methylhexane	72		72		50-130	0		30
Benzene	85		83		50-130	2		30
2,3-Dimethylpentane	76		78		50-130	3		30
3-Methylhexane	72		72		50-130	0		30
Tertiary-Amyl Methyl Ether	86		82		50-130	5		30
Isooctane	75		76		50-130	1		30
Heptane	76		76		50-130	0		30
Methylcyclohexane	78		78		50-130	0		30
2-Methylheptane	80		80		50-130	0		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476242
Report Date: 01/06/25

PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2015223-3 WG2015223-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
3-Methylheptane	78		79		50-130	1		30
Toluene	92		90		50-130	2		30
Octane	78		81		50-130	4		30
Ethylbenzene	92		92		50-130	0		30
p/m-Xylene	96		96		50-130	0		30
Nonane (C9)	80		80		50-130	0		30
o-Xylene	100		100		50-130	0		30
Isopropylbenzene	94		94		50-130	0		30
n-Propylbenzene	96		96		50-130	0		30
1-Methyl-3-Ethylbenzene	98		98		50-130	0		30
1-Methyl-4-Ethylbenzene	100		101		50-130	1		30
1,3,5-Trimethylbenzene	100		99		50-130	1		30
1-Decene	68		68		50-130	0		30
1-Methyl-2-Ethylbenzene	100		100		50-130	0		30
Decane (C10)	92		88		50-130	4		30
1,2,4-Trimethylbenzene	100		99		50-130	1		30
sec-Butylbenzene	100		99		50-130	1		30
1-Methyl-4-N-Propylbenzene	96		94		50-130	2		30
n-Butylbenzene	100		100		50-130	0		30
1,2-Diethylbenzene	106		104		50-130	2		30
Undecane	96		94		50-130	2		30
N-Pentylbenzene	98		97		50-130	1		30
Dodecane (C12)	110		106		50-130	4		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

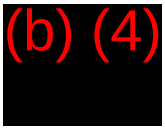
Lab Number: L2476242
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2015223-3 WG2015223-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	87		83		70-130
Toluene-d8	89		89		70-130
4-Bromofluorobenzene	105		103		70-130

(b) (4)

SEMIVOLATILES



Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 23:28
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.90	2.66	1
C1-Decalins	ND		ng/l	4.90	2.66	1
C2-Decalins	ND		ng/l	4.90	2.66	1
C3-Decalins	ND		ng/l	4.90	2.66	1
C4-Decalins	ND		ng/l	4.90	2.66	1
Naphthalene	ND		ng/l	9.80	2.69	1
C1-Naphthalenes	ND		ng/l	9.80	2.69	1
C2-Naphthalenes	ND		ng/l	9.80	2.69	1
C3-Naphthalenes	ND		ng/l	9.80	2.69	1
C4-Naphthalenes	ND		ng/l	9.80	2.69	1
2-Methylnaphthalene	ND		ng/l	9.80	6.50	1
1-Methylnaphthalene	ND		ng/l	9.80	4.24	1
Benzothiophene	ND		ng/l	9.80	2.53	1
C1-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C2-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C3-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C4-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
Biphenyl	ND		ng/l	9.80	2.09	1
2,6-Dimethylnaphthalene	ND		ng/l	9.80	2.99	1
Dibenzofuran	ND		ng/l	9.80	3.68	1
Acenaphthylene	ND		ng/l	9.80	5.13	1
Acenaphthene	ND		ng/l	9.80	3.58	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.80	1.88	1
Fluorene	ND		ng/l	9.80	4.17	1
C1-Fluorenes	ND		ng/l	9.80	4.17	1
C2-Fluorenes	ND		ng/l	9.80	4.17	1
C3-Fluorenes	ND		ng/l	9.80	4.17	1
Dibenzothiophene	ND		ng/l	9.80	3.27	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.80	3.27	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.80	3.27	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.80	3.27	1
C1-Dibenzothiophenes BS	ND		ng/l	9.80	3.27	1
C2-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C3-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C4-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
Phenanthrene	ND		ng/l	9.80	5.85	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.80	5.85	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.80	5.85	1
2-Methylanthracene (2MA)	ND		ng/l	9.80	5.85	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.80	5.85	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.80	5.85	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.80	5.85	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
Retene	ND		ng/l	9.80	5.93	1
Anthracene	ND		ng/l	9.80	3.37	1
Carbazole	ND		ng/l	9.80	5.31	1
Fluoranthene	ND		ng/l	9.80	6.56	1
Benzo(b)fluorene	ND		ng/l	9.80	4.56	1
7H-Benzo(c)fluorene	ND		ng/l	9.80	4.56	1
2-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
4-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
1-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
Pyrene	ND		ng/l	9.80	6.92	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C1-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C2-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C3-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C4-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
Benz(a)anthracene	ND		ng/l	9.80	5.91	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.80	6.95	1
C1-Chrysenes	ND		ng/l	9.80	6.95	1
C2-Chrysenes BS	ND		ng/l	9.80	6.95	1
C3-Chrysenes	ND		ng/l	9.80	6.95	1
C4-Chrysenes	ND		ng/l	9.80	6.95	1
Benzo(b)fluoranthene	ND		ng/l	9.80	7.10	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(a)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(e)pyrene	ND		ng/l	9.80	7.00	1
Benzo(a)pyrene	ND		ng/l	9.80	7.46	1
Perylene	ND		ng/l	9.80	4.51	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.80	9.41	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.80	6.36	1
Benzo(g,h,i)perylene	ND		ng/l	9.80	6.47	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	66		50-130
Phenanthrene-d10	98		50-130
Benzo(a)pyrene-d12	125		50-130

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/03/25 18:31
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.95	2.68	1
C1-Decalins	ND		ng/l	4.95	2.68	1
C2-Decalins	ND		ng/l	4.95	2.68	1
C3-Decalins	ND		ng/l	4.95	2.68	1
C4-Decalins	ND		ng/l	4.95	2.68	1
Naphthalene	ND		ng/l	9.90	2.71	1
C1-Naphthalenes	ND		ng/l	9.90	2.71	1
C2-Naphthalenes	ND		ng/l	9.90	2.71	1
C3-Naphthalenes	ND		ng/l	9.90	2.71	1
C4-Naphthalenes	ND		ng/l	9.90	2.71	1
2-Methylnaphthalene	ND		ng/l	9.90	6.56	1
1-Methylnaphthalene	ND		ng/l	9.90	4.29	1
Benzothiophene	ND		ng/l	9.90	2.55	1
C1-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C2-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C3-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C4-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
Biphenyl	ND		ng/l	9.90	2.11	1
2,6-Dimethylnaphthalene	ND		ng/l	9.90	3.02	1
Dibenzofuran	ND		ng/l	9.90	3.71	1
Acenaphthylene	ND		ng/l	9.90	5.18	1
Acenaphthene	ND		ng/l	9.90	3.61	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.90	1.90	1
Fluorene	ND		ng/l	9.90	4.21	1
C1-Fluorenes	ND		ng/l	9.90	4.21	1
C2-Fluorenes	ND		ng/l	9.90	4.21	1
C3-Fluorenes	ND		ng/l	9.90	4.21	1
Dibenzothiophene	ND		ng/l	9.90	3.31	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.90	3.31	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.90	3.31	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.90	3.31	1
C1-Dibenzothiophenes BS	ND		ng/l	9.90	3.31	1
C2-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C3-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C4-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
Phenanthrene	ND		ng/l	9.90	5.91	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.90	5.91	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.90	5.91	1
2-Methylanthracene (2MA)	ND		ng/l	9.90	5.91	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.90	5.91	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.90	5.91	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.90	5.91	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
Retene	ND		ng/l	9.90	5.99	1
Anthracene	ND		ng/l	9.90	3.40	1
Carbazole	ND		ng/l	9.90	5.37	1
Fluoranthene	ND		ng/l	9.90	6.62	1
Benzo(b)fluorene	ND		ng/l	9.90	4.60	1
7H-Benzo(c)fluorene	ND		ng/l	9.90	4.60	1
2-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
4-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
1-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
Pyrene	ND		ng/l	9.90	6.99	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C1-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C2-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C3-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C4-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
Benz(a)anthracene	ND		ng/l	9.90	5.97	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.90	7.02	1
C1-Chrysenes	ND		ng/l	9.90	7.02	1
C2-Chrysenes BS	ND		ng/l	9.90	7.02	1
C3-Chrysenes	ND		ng/l	9.90	7.02	1
C4-Chrysenes	ND		ng/l	9.90	7.02	1
Benzo(b)fluoranthene	ND		ng/l	9.90	7.17	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(a)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(e)pyrene	ND		ng/l	9.90	7.07	1
Benzo(a)pyrene	ND		ng/l	9.90	7.53	1
Perylene	ND		ng/l	9.90	4.55	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.90	9.50	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.90	6.42	1
Benzo(g,h,i)perylene	ND		ng/l	9.90	6.53	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	89		50-130
Phenanthrene-d10	90		50-130
Benzo(a)pyrene-d12	95		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01-02 Batch: WG2015204-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01-02 Batch: WG2015204-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01-02 Batch: WG2015204-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	67		50-130
Phenanthrene-d10	93		50-130
Benzo(a)pyrene-d12	115		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476242
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01-02 Batch: WG2015204-2 WG2015204-3								
Naphthalene	103		104		50-130	1		30
2-Methylnaphthalene	90		91		50-130	1		30
Acenaphthylene	92		93		50-130	1		30
Acenaphthene	92		93		50-130	1		30
Fluorene	98		98		50-130	0		30
Phenanthrene	97		98		50-130	1		30
Anthracene	111		110		50-130	1		30
Fluoranthene	89		88		50-130	1		30
Pyrene	97		96		50-130	1		30
Benz(a)anthracene	108		108		50-130	0		30
Chrysene/Triphenylene	102		103		50-130	1		30
Benzo(b)fluoranthene	103		105		50-130	2		30
Benzo(j)+(k)fluoranthene	99		101		50-130	2		30
Benzo(a)pyrene	103		105		50-130	2		30
Indeno(1,2,3-cd)pyrene	109		104		50-130	5		30
Dibenz(a,h)+(a,c)anthracene	107		106		50-130	1		30
Benzo(g,h,i)perylene	103		102		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476242
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - [redacted] (b) (4)	Associated sample(s): 01-02 Batch: WG2015204-2 WG2015204-3							

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	91		94		50-130
Phenanthrene-d10	101		101		50-130
Benzo(a)pyrene-d12	101		103		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/03/25 06:49
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0004	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0004	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0002	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-01
Client ID: D3-DL-0017730-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:32
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.032	0.027	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	89		50-130
d50-Tetracosane	86		50-130

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/03/25 08:13
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0005	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0005	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476242-02
Client ID: D3-DL-0017730-24336-3-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 10:37
Date Received: 12/28/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.027	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	86		50-130
d50-Tetracosane	83		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/02/25 19:35
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01-02 Batch: WG2015204-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/02/25 19:35
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01-02 Batch: WG2015204-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	83		50-130
d50-Tetracosane	80		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476242
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01-02 Batch: WG2015204-2 WG2015204-3								
Nonane (C9)	76		68		50-130	11		30
n-Decane (C10)	85		77		50-130	10		30
n-Dodecane (C12)	92		88		50-130	4		30
n-Tetradecane (C14)	93		92		50-130	1		30
n-Hexadecane (C16)	97		97		50-130	0		30
n-Octadecane (C18)	99		100		50-130	1		30
n-Nonadecane (C19)	100		102		50-130	2		30
n-Eicosane (C20)	99		99		50-130	0		30
n-Docosane (C22)	95		95		50-130	0		30
n-Tetracosane (C24)	101		101		50-130	0		30
n-Hexacosane (C26)	94		94		50-130	0		30
n-Octacosane (C28)	95		95		50-130	0		30
n-Triacontane (C30)	94		94		50-130	0		30
n-Hexatriacontane (C36)	86		84		50-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	95		94		50-130
d50-Tetracosane	95		95		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2476242-01A	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476242-01B	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476242-01C	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476242-01D	Amber 1L Na2S2O3/HCl	A	7	7	3.2	Y	Present/Intact		A2-SHC(7)
L2476242-01E	Amber 1L Na2S2O3/HCl	A	7	7	3.2	Y	Present/Intact		A2-ALKPAH(7)
L2476242-02A	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476242-02B	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476242-02C	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476242-02D	Amber 1L Na2S2O3/HCl	A	7	7	3.2	Y	Present/Intact		A2-SHC(7)
L2476242-02E	Amber 1L Na2S2O3/HCl	A	7	7	3.2	Y	Present/Intact		A2-ALKPAH(7)

Container Comments

L2476242-01D	REC'D W/ CUSTODY SEAL INTACT
L2476242-01E	REC'D W/ CUSTODY SEAL INTACT
L2476242-02D	REC'D W/ CUSTODY SEAL INTACT
L2476242-02E	REC'D W/ CUSTODY SEAL INTACT

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

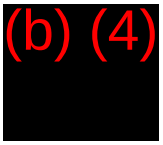
STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:	CTO24F0139	**Lab Number:**	L2476242
Project Number:	60729369.00.46.01	**Report Date:**	01/06/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2476242
Project Number:	60729369.00.46.01	**Report Date:**	01/06/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: CTO24F0139 **Lab Number:** L2476242

Project Number: 60729369.00.46.01 **Report Date:** 01/06/25

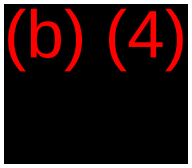
REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

(b) (4)

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab: 12/28/24 | (b) (4) Job #: L2476242

Project Information

Project Name: CTO24F0139

Report Information | **Data Deliverables** | **Billing Information**

- ☐ FAX
- ☐ EMAIL
- ☐ Same as Client info
- PO #: 1677061
- ☐ ADEx
- ☒ Add'l Deliverables

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: AECOM

Address: 1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

Project Location: Honolulu, HI

Project #: 60729369.00.46.01

Project Manager: (b) (6)

(b) (4) Quote #:

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

☐ These samples have been Previously analyzed by (b) (4)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

EDMS DB: JBPHH Drinking Water LTM; Event: EDWM Dec 24 Sampling; Zone: D3

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 SIM Parent and Alkylated PAHs	8015 Sat Hydrocarbons	8260 PIANO + TICs											
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
-01	D3-DL-0017730-24336-N	12/24/24	10:32	DW		☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐		
-02	D3-DL-0017730-24336-3-N	12/24/24	10:37	DW		☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						-	-	-	-	-	-	-	-	-	-	-	-		
Preservative						-	-	-	-	-	-	-	-	-	-	-	-		

(b) (6)

Relinquished By:	Date/Time	Received By:	Date/Time
	1500 12/27/24	(b) (6)	/24 11:57

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 101-09-NJ (rev. 5-JAN-12)

(b) (4), (b) (6)
SHIP DATE: 27DEC24
ACTWGT: 50.00 LB MAN
CAD: 0859493/CAFE3855
BILL SENDER
FedEx
Express
TRK#
0201
7444 9072 9028
SATURDAY 12:00P
PRIORITY OVERNIGHT
XO PYMA
02048
MA-US BOS

(b) (4)
(b) (6)
00887

Appendix C. Tier 1 Analysis Tech Memos

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

March 14, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Benzo(a)pyrene Detection Investigation Zone D4, Hydrant 2390**

Attention CDR Dunn:

On Sunday, December 29, 2024, AECOM Technical Services, Inc. received preliminary notification of a benzo(a)pyrene detection of 0.022 micrograms per liter (µg/L) in sample D4-DL-0017802-24336-N, collected on December 24, 2024, from Hydrant 2390 located in Zone D4. The sample was analyzed at (b) (4), via gas chromatography-mass spectrometry using United States Environmental Protection Agency Method 525.2 and reported in sample delivery group (SDG) DA69618. This result is above the laboratory's reporting limit (RL) of 0.020 µg/L.

AECOM launched an investigation to determine if the reported detection is likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **AECOM concludes that based on multiple lines of evidence, this benzo(a)pyrene detection is not attributable to a petrogenic source and is unrelated to JP-5. Furthermore, it is likely that the benzo(a)pyrene found is due to some minor contamination in the laboratory, which is not unusual at very low concentrations. AECOM concludes that benzo(a)pyrene was not present in the field sample.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control data
- Results of supplemental analyses

Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that was designated in the revised Extended Drinking Water Monitoring (EDWM) Plan (October 2024) as a compound that is potentially associated with petroleum compounds, and therefore, must be evaluated when detected above the reporting limit.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits (MDLs) and met the Data Quality Objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. One part of evaluating benzo(a)pyrene is to send an additional sample to (b) (4) They measure the amount of petroleum hydrocarbons and other potential indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the EDWM Program. Specifically, when evaluating Total Petroleum Hydrocarbon (TPH) detections, the PIANO and SHC methods can identify and quantitate individual hydrocarbon (with RLs of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. This additional analysis performed exceeds industry standards and goes beyond meeting the DQOs of EDWM.

Additional sample volume was submitted to (b) (4) on December 11, 2025, for Tier 2 analyses (b) (4) SDG L2472820). **There were no detections of benzo(a)pyrene or other PAHs in the Tier 2 analyses.**

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water in Hydrant 2390 does not contain benzo(a)pyrene nor any other petroleum compounds. The original detection of benzo(a)pyrene is most likely due to a laboratory artifact. AECOM is working with the laboratory to try to identify the mechanism by which the contaminant may have been introduced to the sample and will continue to do so. No additional action is currently recommended.

A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory report from (b) (4) is provided in Attachment 2. Attachment 3 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6).

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Technical Discussion of Sample D4-DL-0017802-24336-N

Attachment 2: (b) (4) Laboratory Report L2476398

Attachment 3: Glossary of Terms

Attachment 1: *Technical Review of Sample D4-DL-0017802-24336-N*

The chromatogram and mass spectrum for D4-DL-0017802-24336-N were reviewed to verify that benzo(a)pyrene was correctly identified. The retention time and ion ratios met all criteria indicating that the peak was correctly identified as benzo(a)pyrene. The mass spectrum is presented as Figure 1.

All associated field and laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have led to a false positive result. Items reviewed included:

- Field reagent blank results
- Method blank results
- Blank spike recoveries
- Surrogate standard recoveries
- Internal standard recoveries
- Initial calibration (ICAL) curve
- Initial calibration verification (ICV)
- Continuing calibration verification (CCV)

Benzo(a)pyrene was not detected above the detection limit (DL) in either the field reagent blank or method blank. Associated results in the blank spike, surrogate standards, internal standards, ICAL, CCV, and ICV were within acceptance limits.

There is nothing in the (b) (4) data to suggest that either the identity or concentration were reported incorrectly in this sample; however, it is extremely unlikely that benzo(a)pyrene was present in this sample due to a petrogenic source. The preliminary evidence supporting this assertion includes:

- Non-detect results in both the diesel range organics (DRO) and oil range organics (ORO) of the SW-846 8015D total petroleum hydrocarbon (TPH) analysis
- Non-detect results for all other polycyclic aromatic hydrocarbons (PAHs)

Benzo(a)pyrene is classified as a PAH, and PAHs from petrogenic sources are known to be less abundant relative to alkane hydrocarbons (alkane hydrocarbons would be detected in the TPH ranges). Benzo(a)pyrene is almost never the most abundant PAH in any pyrogenic or petrogenic PAH pattern, so the ratios of the other parent (and alkylated) can provide valuable clues about the PAH source(s). A pyrogenic PAH pattern is almost always dominated by fluoranthene and pyrene, neither of which were detected. If benzo(a)pyrene was present in the sample due to a petroleum source, additional PAHs would also be expected to be present.

The ability to identify and quantitate individual DRO and ORO constituents is limited in the standard 8015D method used by (b) (4), and its detection limits for the other PAHs measured via method 525.2 are an order of magnitude greater than the detection limit for benzo(a)pyrene. Therefore, to provide further confidence in the assertions above related to the absence of other petroleum indicators, the sample was recollected and sent to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D - Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons

All results were non-detect in the PIANO and PAH analyses. The saturated hydrocarbons analysis yielded detections of the n-alkanes hexacosane (C26), heptacosane (C27), nonacosane (C29), and triacontane (C30) which were slightly above their respective DLs, but below RLs, and each was less than 1 microgram

per liter (µg/L). These detections are of no consequence and were all seen in the laboratory method blank at levels just below the DL. These results confirm the lack of evidence for a petrogenic source of the detection.

The most likely source of the benzo(a)pyrene is unidentified sporadic low-level contamination in the laboratory. There is no evidence of systematic contamination in the laboratory but given the presence of all target compounds in calibration standards and spiking solutions, the potential for incidental contamination exists, particularly at low levels. The detected concentration was less than twice the reporting limit (RL) of 0.02 µg/L, which is also the concentration of the lowest calibration standard.

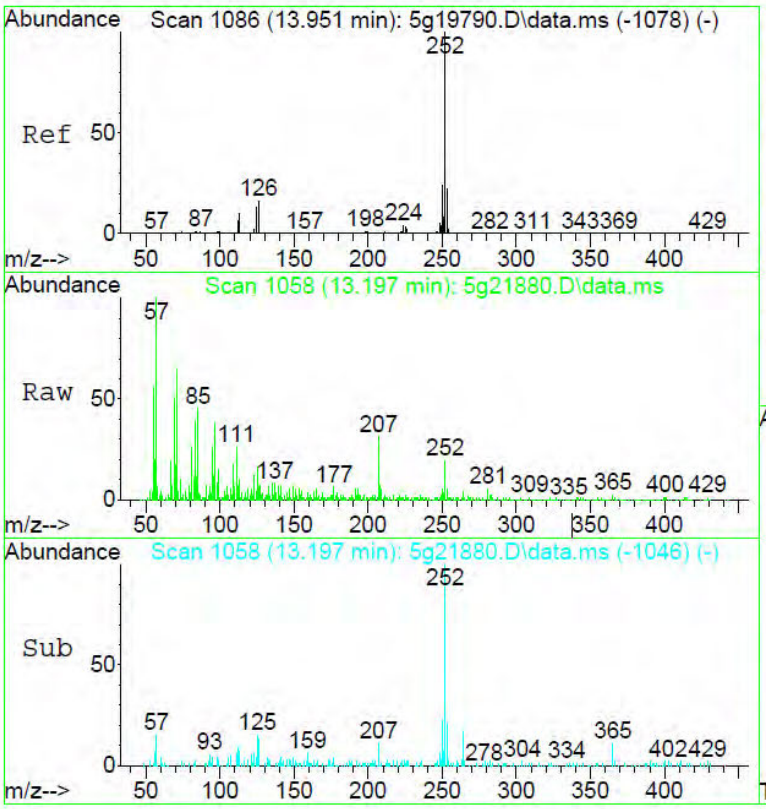
Sporadic low-level hits of benzo(a)pyrene have been detected in field blanks, method blanks, and samples throughout the extended drinking water monitoring program. The following table summarizes benzo(a)pyrene detections for samples collected from September 1, 2024, through December 31, 2024.

Sample Type	**Number**	**# ND**	**%ND**	**# <RL**	**% <RL**	**# >RL**	**% >RL**
Field Sample	1968	1935	98%	22	1.1%	11	0.6%
Field Reagent Blank	318	310	97%	6	1.9%	2	0.6%
Method Blank	149	146	98%	2	1.3%	1	0.7%

The fact that frequency of detections in field reagent blanks is the same or slightly greater than that in the field samples further supports the conclusion that benzo(a)pyrene was not present in the sample but was introduced in the laboratory.

It is also worth noting that this sample was originally extracted and analyzed yielding a non-detect result. During the original sample preparation, the spiking solution containing all PAHs except benzo(a)pyrene was not added to the batch QC samples due to an oversight, so the entire batch was re-extracted and reanalyzed. All QC criteria were met for benzo(a)pyrene in both the original and re-extracted sample and could have been reported. However, it was decided to take a conservative approach and report the higher value. The lack of agreement between the two analyses also supports the conclusion that the detected benzo(a)pyrene originated in the laboratory rather than in the sample.

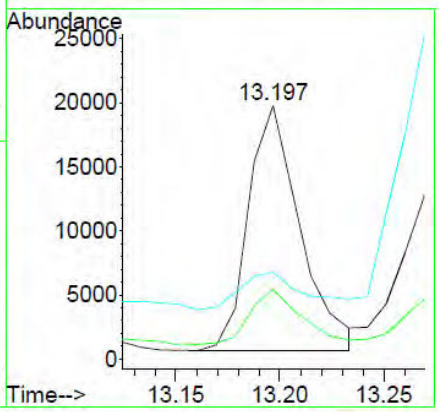
Figure 1. Mass Spectral Analysis of D4-DL-0017802-24336-N



#7
Benzo(a)pyrene
Concen: 0.0221 ppm
RT: 13.197 min Scan# 1058
Delta R.T. 0.009 min
Lab File: 5g21880.D
Acq: 28 Dec 2024 12:25 am

Tgt Ion:252 Resp: 33110

Ion	Ratio	Lower	Upper
252	100		
253	22.9	1.9	41.9
126	19.1	0.0	36.1



Attachment 2: (b) (4) Laboratory Report L2476398

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2476398
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	CTO24F0139
Project Number:	60729369.00.46.01
Report Date:	01/08/25

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476398
Report Date: 01/08/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2476398-01	D4-DL-0017802-24336-N	WATER	HONOLULU, HI	12/24/24 13:28	12/31/24

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2476398
Project Number:	60729369.00.46.01	**Report Date:**	01/08/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398
Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 01/08/25

(b) (4)

ORGANICS

(b) (4)

VOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/03/25 18:04
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	91		70-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/25 22:32
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2016671-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/25 22:32
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2016671-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/25 22:32
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2016671-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/25 22:32
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2016671-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/25 22:32
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2016671-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/25 22:32
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)	for sample(s):	01	Batch:	WG2016671-5	

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND		ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	109		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	94		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476398
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2016671-3 WG2016671-4								
1-Pentene	72		72		50-130	0		30
Pentane	72		72		50-130	0		30
Tertiary Butanol	104		101		50-130	3		30
Cyclopentane	76		76		50-130	0		30
2-Methylpentane	84		84		50-130	0		30
Methyl tert butyl ether	80		86		50-130	7		30
3-Methylpentane	92		92		50-130	0		30
1-Hexene	92		93		50-130	1		30
n-Hexane	88		86		50-130	2		30
Isopropyl Ether	96		96		50-130	0		30
Ethyl-Tert-Butyl-Ether	92		92		50-130	0		30
Methylcyclopentane	94		94		50-130	0		30
2,4-Dimethylpentane	92		90		50-130	2		30
Cyclohexane	94		92		50-130	2		30
2-Methylhexane	92		92		50-130	0		30
Benzene	93		92		50-130	1		30
2,3-Dimethylpentane	98		96		50-130	2		30
3-Methylhexane	90		88		50-130	2		30
Tertiary-Amyl Methyl Ether	80		78		50-130	3		30
Isooctane	95		96		50-130	1		30
Heptane	96		96		50-130	0		30
Methylcyclohexane	83		82		50-130	1		30
2-Methylheptane	98		98		50-130	0		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476398
Report Date: 01/08/25

PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2016671-3 WG2016671-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
3-Methylheptane	96		96		50-130	0		30
Toluene	90		90		50-130	0		30
Octane	96		96		50-130	0		30
Ethylbenzene	85		86		50-130	1		30
p/m-Xylene	90		89		50-130	1		30
Nonane (C9)	84		84		50-130	0		30
o-Xylene	90		89		50-130	1		30
Isopropylbenzene	89		90		50-130	1		30
n-Propylbenzene	91		91		50-130	0		30
1-Methyl-3-Ethylbenzene	88		88		50-130	0		30
1-Methyl-4-Ethylbenzene	94		94		50-130	0		30
1,3,5-Trimethylbenzene	90		90		50-130	0		30
1-Decene	73		71		50-130	3		30
1-Methyl-2-Ethylbenzene	89		90		50-130	1		30
Decane (C10)	94		94		50-130	0		30
1,2,4-Trimethylbenzene	86		86		50-130	0		30
sec-Butylbenzene	92		91		50-130	1		30
1-Methyl-4-N-Propylbenzene	82		82		50-130	0		30
n-Butylbenzene	87		87		50-130	0		30
1,2-Diethylbenzene	88		88		50-130	0		30
Undecane	100		99		50-130	1		30
N-Pentylbenzene	86		88		50-130	2		30
Dodecane (C12)	107		108		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

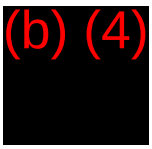
Lab Number: L2476398
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2016671-3 WG2016671-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	100		100		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	102		102		70-130

(b) (4)

SEMIVOLATILES



Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/03/25 19:56
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.88	2.64	1
C1-Decalins	ND		ng/l	4.88	2.64	1
C2-Decalins	ND		ng/l	4.88	2.64	1
C3-Decalins	ND		ng/l	4.88	2.64	1
C4-Decalins	ND		ng/l	4.88	2.64	1
Naphthalene	ND		ng/l	9.76	2.67	1
C1-Naphthalenes	ND		ng/l	9.76	2.67	1
C2-Naphthalenes	ND		ng/l	9.76	2.67	1
C3-Naphthalenes	ND		ng/l	9.76	2.67	1
C4-Naphthalenes	ND		ng/l	9.76	2.67	1
2-Methylnaphthalene	ND		ng/l	9.76	6.47	1
1-Methylnaphthalene	ND		ng/l	9.76	4.22	1
Benzothiophene	ND		ng/l	9.76	2.52	1
C1-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C2-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C3-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
C4-Benzo(b)thiophenes	ND		ng/l	9.76	2.52	1
Biphenyl	ND		ng/l	9.76	2.08	1
2,6-Dimethylnaphthalene	ND		ng/l	9.76	2.98	1
Dibenzofuran	ND		ng/l	9.76	3.66	1
Acenaphthylene	ND		ng/l	9.76	5.10	1
Acenaphthene	ND		ng/l	9.76	3.56	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.76	1.87	1
Fluorene	ND		ng/l	9.76	4.15	1
C1-Fluorenes	ND		ng/l	9.76	4.15	1
C2-Fluorenes	ND		ng/l	9.76	4.15	1
C3-Fluorenes	ND		ng/l	9.76	4.15	1
Dibenzothiophene	ND		ng/l	9.76	3.26	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.76	3.26	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.76	3.26	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.76	3.26	1
C1-Dibenzothiophenes BS	ND		ng/l	9.76	3.26	1
C2-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
C3-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
C4-Dibenzothiophenes	ND		ng/l	9.76	3.26	1
Phenanthrene	ND		ng/l	9.76	5.82	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.76	5.82	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.76	5.82	1
2-Methylanthracene (2MA)	ND		ng/l	9.76	5.82	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.76	5.82	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.76	5.82	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.76	5.82	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.76	5.82	1
Retene	ND		ng/l	9.76	5.90	1
Anthracene	ND		ng/l	9.76	3.36	1
Carbazole	ND		ng/l	9.76	5.29	1
Fluoranthene	ND		ng/l	9.76	6.53	1
Benzo(b)fluorene	ND		ng/l	9.76	4.54	1
7H-Benzo(c)fluorene	ND		ng/l	9.76	4.54	1
2-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
4-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
1-Methylpyrene[1]	ND		ng/l	9.76	6.89	1
Pyrene	ND		ng/l	9.76	6.89	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.76	6.89	1
Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C1-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C2-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C3-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
C4-Naphthobenzothiophenes	ND		ng/l	9.76	4.26	1
Benz(a)anthracene	ND		ng/l	9.76	5.88	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.76	6.92	1
C1-Chrysenes	ND		ng/l	9.76	6.92	1
C2-Chrysenes BS	ND		ng/l	9.76	6.92	1
C3-Chrysenes	ND		ng/l	9.76	6.92	1
C4-Chrysenes	ND		ng/l	9.76	6.92	1
Benzo(b)fluoranthene	ND		ng/l	9.76	7.06	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.76	6.30	1
Benzo(a)fluoranthene	ND		ng/l	9.76	6.30	1
Benzo(e)pyrene	ND		ng/l	9.76	6.96	1
Benzo(a)pyrene	ND		ng/l	9.76	7.42	1
Perylene	ND		ng/l	9.76	4.49	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.76	9.36	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.76	6.33	1
Benzo(g,h,i)perylene	ND		ng/l	9.76	6.44	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	80		50-130
Phenanthrene-d10	84		50-130
Benzo(a)pyrene-d12	89		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2015204-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2015204-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2015204-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	67		50-130
Phenanthrene-d10	93		50-130
Benzo(a)pyrene-d12	115		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476398
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2015204-2 WG2015204-3								
Naphthalene	103		104		50-130	1		30
2-Methylnaphthalene	90		91		50-130	1		30
Acenaphthylene	92		93		50-130	1		30
Acenaphthene	92		93		50-130	1		30
Fluorene	98		98		50-130	0		30
Phenanthrene	97		98		50-130	1		30
Anthracene	111		110		50-130	1		30
Fluoranthene	89		88		50-130	1		30
Pyrene	97		96		50-130	1		30
Benz(a)anthracene	108		108		50-130	0		30
Chrysene/Triphenylene	102		103		50-130	1		30
Benzo(b)fluoranthene	103		105		50-130	2		30
Benzo(j)+(k)fluoranthene	99		101		50-130	2		30
Benzo(a)pyrene	103		105		50-130	2		30
Indeno(1,2,3-cd)pyrene	109		104		50-130	5		30
Dibenz(a,h)+(a,c)anthracene	107		106		50-130	1		30
Benzo(g,h,i)perylene	103		102		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2015204-2 WG2015204-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	91		94		50-130
Phenanthrene-d10	101		101		50-130
Benzo(a)pyrene-d12	101		103		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/03/25 09:38
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0004	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0004	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0002	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	0.0004	J	mg/l	0.0010	0.0003	1
n-Heptacosane (C27)	0.0004	J	mg/l	0.0010	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	0.001	JC	mg/l	0.001	0.001	1
n-Triacontane (C30)	0.0002	J	mg/l	0.0010	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2476398-01
Client ID: D4-DL-0017802-24336-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:28
Date Received: 12/31/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.032	0.027	1
Total Saturated Hydrocarbons	0.002	J	mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	81		50-130
d50-Tetracosane	79		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/02/25 19:35
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2015204-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/02/25 19:35
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2015204-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	83		50-130
d50-Tetracosane	80		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2476398
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01 Batch: WG2015204-2 WG2015204-3								
Nonane (C9)	76		68		50-130	11		30
n-Decane (C10)	85		77		50-130	10		30
n-Dodecane (C12)	92		88		50-130	4		30
n-Tetradecane (C14)	93		92		50-130	1		30
n-Hexadecane (C16)	97		97		50-130	0		30
n-Octadecane (C18)	99		100		50-130	1		30
n-Nonadecane (C19)	100		102		50-130	2		30
n-Eicosane (C20)	99		99		50-130	0		30
n-Docosane (C22)	95		95		50-130	0		30
n-Tetracosane (C24)	101		101		50-130	0		30
n-Hexacosane (C26)	94		94		50-130	0		30
n-Octacosane (C28)	95		95		50-130	0		30
n-Triacontane (C30)	94		94		50-130	0		30
n-Hexatriacontane (C36)	86		84		50-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	95		94		50-130
d50-Tetracosane	95		95		50-130

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01
Lab Number: L2476398
Report Date: 01/08/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2476398-01A	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476398-01B	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476398-01C	Vial Ascorbic Acid/HCl preserved	A	NA		3.2	Y	Present/Intact		A2-PIANO8260(14)
L2476398-01D	Amber 1L Na2S2O3	A	7	7	3.2	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2476398-01E	Amber 1L Na2S2O3	A	7	7	3.2	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

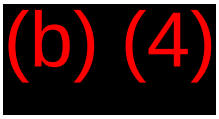
STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:	CTO24F0139	**Lab Number:**	L2476398
Project Number:	60729369.00.46.01	**Report Date:**	01/08/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2476398
Project Number:	60729369.00.46.01	**Report Date:**	01/08/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: CTO24F0139 **Lab Number:** L2476398

Project Number: 60729369.00.46.01 **Report Date:** 01/08/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)
Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)
Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

(b) (4)

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab: 12/31/24

(b) (4) Job #: L2476398

Project Information

Project Name: CTO24F0139

Project Location: Honolulu, HI

Project #: 60729369.00.46.01

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information — Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☒ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 1677061

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: AECOM

Address: 1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

EDMS DB: JBPHH Drinking Water LTM; Event: EDWM Dec 2024 Samplingl; Zone: D4

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done ☐ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

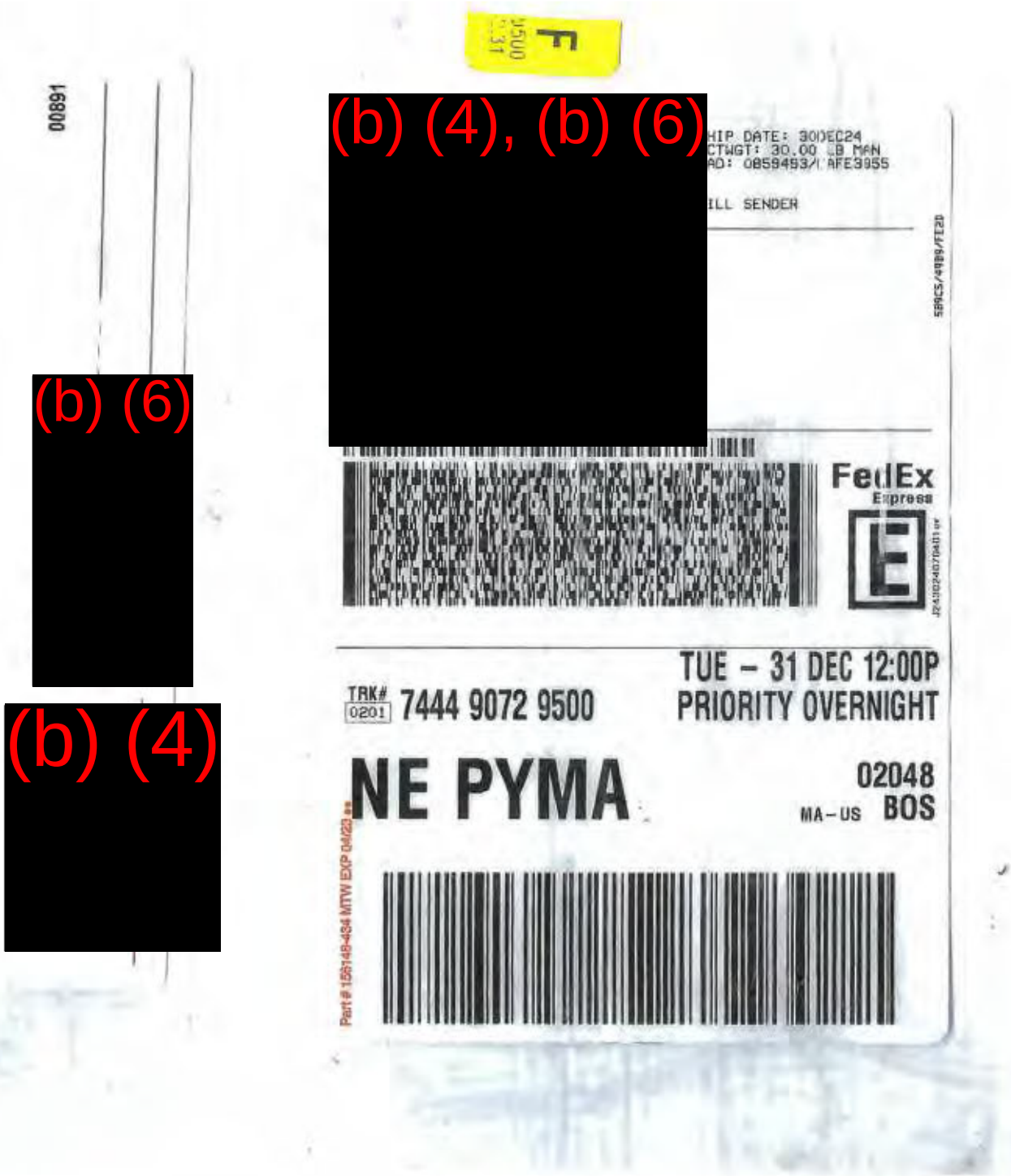
(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 SIM Parent and Alkylated PAHs	8015 Sat Hydrocarbons	8260 PIANO + TICs
76398-01	D4-DL-0017802-24336-N	12/24/24	13:28	DW		☒	☒	☒

Container Type	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
(b) (6)	12/30/24 1300	(b) (6)	12/31/24 10:41
	12/31/24 10:41		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 101-08(NJ)


00891
(b) (6)
(b) (4)
(b) (4), (b) (6)
HIP DATE: 30DEC24
CTWGT: 30.00 LB MAN
AO: 0859493/I AFE3955
ILL SENDER
FedEx
Express
TRK# 0201 7444 9072 9500
TUE - 31 DEC 12:00P
PRIORITY OVERNIGHT
NE PYMA
02048
MA-US BOS

Appendix C. Tier 1 Analysis Tech Memos

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile – A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic – Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO – An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit – The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

March 14, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water Benzo(a)pyrene Detection Investigation Zone D1, 127 Singleton Court**

Attention CDR Dunn:

On Sunday, December 29, 2024, AECOM Technical Services, Inc. received preliminary notification of a benzo(a)pyrene detection of 0.020 microgram per liter (µg/L) in sample D1-TW-0001065-24331-N, collected from the upstairs hallway bathroom sink in the residence at 127 Singleton Court in Zone D1, on December 24, 2024. The sample was analyzed at (b) (4) , via gas chromatography-mass spectrometry using United States Environmental Protection Agency Method 525.2 and reported in sample delivery group (SDG) DA69616. This result is at the laboratory's reporting limit (RL) of 0.020 µg/L.

AECOM launched an investigation to determine if the reported detection is likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of Jet Propellant 5 (JP-5), and if not, to assign a probable reason for the detection. **AECOM concludes that based on multiple lines of evidence, this benzo(a)pyrene detection is not attributable to a petrogenic source and is unrelated to JP-5. Furthermore, it is likely that the benzo(a)pyrene found is due to some minor contamination in the laboratory, which is not unusual at very low concentrations. AECOM concludes that benzo(a)pyrene was not present in the field sample.**

This conclusion was developed after reviewing multiple lines of evidence including:

- Sample chromatograms
- Mass spectral profile
- Field and laboratory quality control data
- Results of supplemental analyses

Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that was designated in the revised Extended Drinking Water Monitoring (EDWM) Plan (October 2024) as a compound that is potentially associated with petroleum compounds, and therefore, must be evaluated when detected above the reporting limit.

Supplementary Analyses

In addition to ensuring that the laboratory data achieved low method detection limits (MDLs) and met the Data Quality Objectives (DQOs) of EDWM, additional voluntary forensic analyses were performed on the sample. One part of evaluating benzo(a)pyrene is to send an additional sample to (b) (4) They measure the amount of petroleum hydrocarbons and other potential indicators using specific forensic methods known as Tier 2 analyses:

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide more detailed information than is possible with the original sample analytical methods covered under the EDWM Program. Specifically, when evaluating Total Petroleum Hydrocarbon (TPH) detections, the PIANO and SHC methods can identify and quantitate individual hydrocarbon (with RLs of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range (with an RL of 80 µg/L). An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was present in the sample or may have been introduced at the time of sampling or in the laboratory. This additional analysis performed exceeds industry standards and goes beyond meeting the DQOs of EDWM.

In this instance, this location had already been selected to undergo Tier 2 analyses (b) (4) SDG L2476004). **There were no detections in the PIANO, PAHs, or SHCs analyses. Benzo(a)pyrene was not detected and there were no detections of any other PAHs above the RL of 0.010 µg/L.**

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water in 127 Singleton Court does not contain benzo(a)pyrene nor any other petroleum compounds. The original detection of benzo(a)pyrene is most likely due to a laboratory artifact. AECOM is working with the laboratory to try to identify the mechanism by which the contaminant may have been introduced to the sample and will continue to do so. No additional action is currently recommended.

A detailed discussion of the investigation into this result is provided in Attachment 1. The laboratory report from (b) (4) is provided in Attachment 2. Attachment 3 provides a glossary of terms used in the investigation.

Questions regarding this letter should be addressed to (b) (6) .

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

cc: (b) (6)

Attachments

Attachment 1: Technical Discussion of Sample D1-TW-0001065-24331-N

Attachment 2: (b) (4) Laboratory Report L2476004

Attachment 3: Glossary of Terms

Attachment 1: *Technical Review of Sample D1-TW-0001065-24331-N*

The chromatogram and mass spectrum for D1-TW-0001065-24331-N were reviewed to verify that benzo(a)pyrene was correctly identified. The retention time and ion ratios met all criteria indicating that the peak was correctly identified as benzo(a)pyrene. The mass spectrum is presented as Figure 1.

All associated field and laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have led to a false positive result. Items reviewed included:

- Field reagent blank results
- Method blank results
- Blank spike recoveries
- Surrogate standard recoveries
- Internal standard recoveries
- Initial calibration (ICAL) curve
- Initial calibration verification (ICV)
- Continuing calibration verification (CCV)

Benzo(a)pyrene was not detected above the detection limit (DL) in either the field reagent blank or method blank. Associated results in the blank spike, surrogate standards, internal standards, ICAL, CCV, and ICV were within acceptance limits.

There is nothing in the (b) (4) data to suggest that either the identity or concentration were reported incorrectly in this sample; however, it is extremely unlikely that benzo(a)pyrene was present in this sample due to a petrogenic source. The preliminary evidence supporting this assertion includes:

- Non-detect results in both the diesel range organics (DRO) and oil range organics (ORO) of the SW-846 8015D total petroleum hydrocarbon (TPH) analysis
- Non-detect results for all other polycyclic aromatic hydrocarbons (PAHs)

Benzo(a)pyrene is classified as a PAH, and PAHs from petrogenic sources are known to be less abundant relative to alkane hydrocarbons (alkane hydrocarbons would be detected in the TPH ranges.) Benzo(a)pyrene is almost never the most abundant PAH in any pyrogenic or petrogenic PAH pattern, so the ratios of the other parent (and alkylated) can provide valuable clues about the PAH source(s). A pyrogenic PAH pattern is almost always dominated by fluoranthene and pyrene, neither of which were detected. If benzo(a)pyrene was present in the sample due to a petroleum source, additional PAHs would also be expected to be present.

The ability to identify and quantitate individual DRO and ORO constituents is limited in the standard 8015D method used by (b) (4), and its detection limits for the other PAHs measured via method 525.2 are an order of magnitude greater than the detection limit for benzo(a)pyrene. Therefore, to provide further confidence in the assertions above related to the absence of other petroleum indicators, the sample was sent to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D - Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – PAHs and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons

All results were non-detect in all three analyses, confirming the lack of evidence for a petrogenic source of the detection.

The most likely source of the benzo(a)pyrene is unidentified sporadic low-level contamination in the laboratory. There is no evidence of systematic contamination in the laboratory but given the presence of

all target compounds in calibration standards and spiking solutions, the potential for incidental contamination exists, particularly at low levels. The detected concentration was less than twice the reporting limit (RL) of 0.02 microgram per liter, which is also the concentration of the lowest calibration standard.

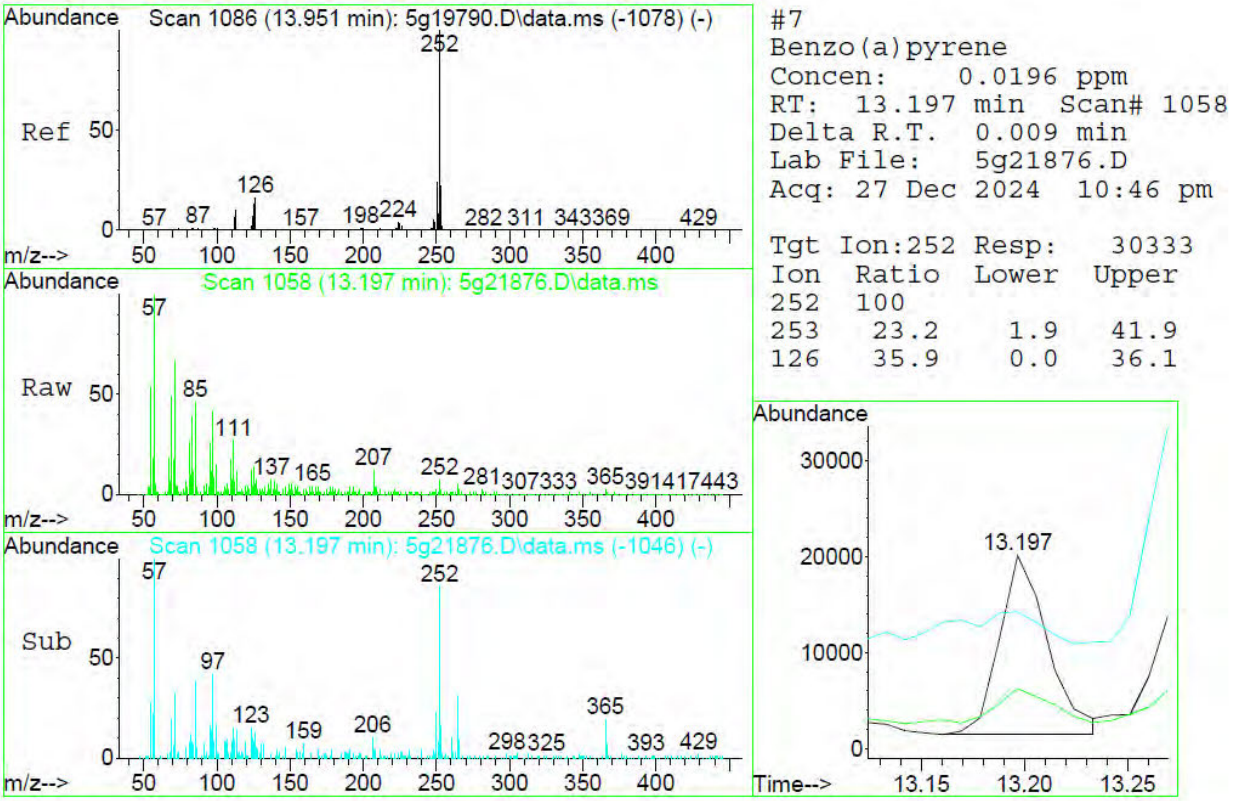
Sporadic low-level hits of benzo(a)pyrene have been detected in field blanks, method blanks, and samples throughout the extended drinking water monitoring program. The following table summarizes benzo(a)pyrene detections for samples collected from September 1, 2024, through December 31, 2024.

Sample Type	**Number**	**# ND**	**%ND**	**# <RL**	**% <RL**	**# >RL**	**% >RL**
Field Sample	1968	1935	98%	22	1.1%	11	0.6%
Field Reagent Blank	318	310	97%	6	1.9%	2	0.6%
Method Blank	149	146	98%	2	1.3%	1	0.7%

The fact that frequency of detections in field reagent blanks is the same or slightly greater than that in the field samples further supports the conclusion that benzo(a)pyrene was not present in the sample but was introduced in the laboratory.

It is also worth noting that this sample was originally extracted and analyzed yielding a non-detect result. During the original sample preparation, the spiking solution containing all PAHs except benzo(a)pyrene was not added to the batch QC samples due to an oversight, so the entire batch was re-extracted and reanalyzed. All QC criteria were met for benzo(a)pyrene in both the original and re-extracted sample and could have been reported. However, it was decided to take a conservative approach and report the higher value. The lack of agreement between the two analyses also supports the conclusion that the detected benzo(a)pyrene originated in the laboratory rather than in the sample.

Figure 1. Mass Spectral Analysis of D1-TW-0001065-24331-N



#7
Benzo(a)pyrene
Concen: 0.0196 ppm
RT: 13.197 min Scan# 1058
Delta R.T. 0.009 min
Lab File: 5g21876.D
Acq: 27 Dec 2024 10:46 pm

Tgt Ion:252 Resp: 30333

Ion	Ratio	Lower	Upper
252	100		
253	23.2	1.9	41.9
126	35.9	0.0	36.1

Attachment 2: (b) (4) Laboratory Report L2476004

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2476004
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	EDWM
Project Number:	60729369
Report Date:	01/06/25

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2476004-01	50-TB-241224-24331-N	WATER	HONOLULU, HI	12/24/24 08:20	12/27/24
L2476004-02	D1-TW-0001065-24331-N	WATER	HONOLULU, HI	12/24/24 13:39	12/27/24

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2476004
Project Number:	60729369	**Report Date:**	01/06/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name: EDWM **Lab Number:** L2476004
Project Number: 60729369 **Report Date:** 01/06/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

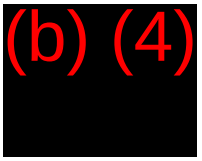
I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 01/06/25

(b) (4)

ORGANICS



VOLATILES

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-01
Client ID: 50-TB-241224-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 08:20
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/30/24 19:34
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-01
Client ID: 50-TB-241224-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 08:20
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

SAMPLE RESULTS

Lab ID: L2476004-01
Client ID: 50-TB-241224-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 08:20
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-01
Client ID: 50-TB-241224-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 08:20
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-01
Client ID: 50-TB-241224-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 08:20
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	98		70-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/30/24 21:52
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130

(b) (4)

Project Name: EDWM **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: EDWM **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: EDWM **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: EDWM **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: EDWM **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/24 16:54
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-02 Batch: WG2015223-5					
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2015223-3 WG2015223-4								
1-Pentene	56		57		50-130	2		30
Pentane	58		56		50-130	4		30
Tertiary Butanol	85		82		50-130	4		30
Cyclopentane	65		68		50-130	5		30
2-Methylpentane	63		65		50-130	3		30
Methyl tert butyl ether	90		85		50-130	6		30
3-Methylpentane	70		70		50-130	0		30
1-Hexene	70		70		50-130	0		30
n-Hexane	67		68		50-130	1		30
Isopropyl Ether	85		81		50-130	5		30
Ethyl-Tert-Butyl-Ether	86		83		50-130	4		30
Methylcyclopentane	70		70		50-130	0		30
2,4-Dimethylpentane	72		72		50-130	0		30
Cyclohexane	72		72		50-130	0		30
2-Methylhexane	72		72		50-130	0		30
Benzene	85		83		50-130	2		30
2,3-Dimethylpentane	76		78		50-130	3		30
3-Methylhexane	72		72		50-130	0		30
Tertiary-Amyl Methyl Ether	86		82		50-130	5		30
Isooctane	75		76		50-130	1		30
Heptane	76		76		50-130	0		30
Methylcyclohexane	78		78		50-130	0		30
2-Methylheptane	80		80		50-130	0		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2015223-3 WG2015223-4								
3-Methylheptane	78		79		50-130	1		30
Toluene	92		90		50-130	2		30
Octane	78		81		50-130	4		30
Ethylbenzene	92		92		50-130	0		30
p/m-Xylene	96		96		50-130	0		30
Nonane (C9)	80		80		50-130	0		30
o-Xylene	100		100		50-130	0		30
Isopropylbenzene	94		94		50-130	0		30
n-Propylbenzene	96		96		50-130	0		30
1-Methyl-3-Ethylbenzene	98		98		50-130	0		30
1-Methyl-4-Ethylbenzene	100		101		50-130	1		30
1,3,5-Trimethylbenzene	100		99		50-130	1		30
1-Decene	68		68		50-130	0		30
1-Methyl-2-Ethylbenzene	100		100		50-130	0		30
Decane (C10)	92		88		50-130	4		30
1,2,4-Trimethylbenzene	100		99		50-130	1		30
sec-Butylbenzene	100		99		50-130	1		30
1-Methyl-4-N-Propylbenzene	96		94		50-130	2		30
n-Butylbenzene	100		100		50-130	0		30
1,2-Diethylbenzene	106		104		50-130	2		30
Undecane	96		94		50-130	2		30
N-Pentylbenzene	98		97		50-130	1		30
Dodecane (C12)	110		106		50-130	4		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-02 Batch: WG2015223-3 WG2015223-4

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	87		83		70-130
Toluene-d8	89		89		70-130
4-Bromofluorobenzene	105		103		70-130

(b) (4)

SEMIVOLATILES

(b) (4)

Project Name: EDWM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2476004

Project Number: 60729369 | **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 22:00
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.85	2.63	1
C1-Decalins	ND		ng/l	4.85	2.63	1
C2-Decalins	ND		ng/l	4.85	2.63	1
C3-Decalins	ND		ng/l	4.85	2.63	1
C4-Decalins	ND		ng/l	4.85	2.63	1
Naphthalene	ND		ng/l	9.71	2.66	1
C1-Naphthalenes	ND		ng/l	9.71	2.66	1
C2-Naphthalenes	ND		ng/l	9.71	2.66	1
C3-Naphthalenes	ND		ng/l	9.71	2.66	1
C4-Naphthalenes	ND		ng/l	9.71	2.66	1
2-Methylnaphthalene	ND		ng/l	9.71	6.44	1
1-Methylnaphthalene	ND		ng/l	9.71	4.20	1
Benzothiophene	ND		ng/l	9.71	2.50	1
C1-Benzo(b)thiophenes	ND		ng/l	9.71	2.50	1
C2-Benzo(b)thiophenes	ND		ng/l	9.71	2.50	1
C3-Benzo(b)thiophenes	ND		ng/l	9.71	2.50	1
C4-Benzo(b)thiophenes	ND		ng/l	9.71	2.50	1
Biphenyl	ND		ng/l	9.71	2.07	1
2,6-Dimethylnaphthalene	ND		ng/l	9.71	2.96	1
Dibenzofuran	ND		ng/l	9.71	3.64	1
Acenaphthylene	ND		ng/l	9.71	5.08	1
Acenaphthene	ND		ng/l	9.71	3.54	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.71	1.86	1
Fluorene	ND		ng/l	9.71	4.13	1
C1-Fluorenes	ND		ng/l	9.71	4.13	1
C2-Fluorenes	ND		ng/l	9.71	4.13	1
C3-Fluorenes	ND		ng/l	9.71	4.13	1
Dibenzothiophene	ND		ng/l	9.71	3.24	1

(b) (4)

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.71	3.24	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.71	3.24	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.71	3.24	1
C1-Dibenzothiophenes BS	ND		ng/l	9.71	3.24	1
C2-Dibenzothiophenes	ND		ng/l	9.71	3.24	1
C3-Dibenzothiophenes	ND		ng/l	9.71	3.24	1
C4-Dibenzothiophenes	ND		ng/l	9.71	3.24	1
Phenanthrene	ND		ng/l	9.71	5.80	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.71	5.80	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.71	5.80	1
2-Methylanthracene (2MA)	ND		ng/l	9.71	5.80	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.71	5.80	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.71	5.80	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.71	5.80	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.71	5.80	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.71	5.80	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.71	5.80	1
Retene	ND		ng/l	9.71	5.87	1
Anthracene	ND		ng/l	9.71	3.34	1
Carbazole	ND		ng/l	9.71	5.26	1
Fluoranthene	ND		ng/l	9.71	6.50	1
Benzo(b)fluorene	ND		ng/l	9.71	4.51	1
7H-Benzo(c)fluorene	ND		ng/l	9.71	4.51	1
2-Methylpyrene[1]	ND		ng/l	9.71	6.85	1
4-Methylpyrene[1]	ND		ng/l	9.71	6.85	1
1-Methylpyrene[1]	ND		ng/l	9.71	6.85	1
Pyrene	ND		ng/l	9.71	6.85	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.71	6.85	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.71	6.85	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.71	6.85	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.71	6.85	1
Naphthobenzothiophenes	ND		ng/l	9.71	4.24	1
C1-Naphthobenzothiophenes	ND		ng/l	9.71	4.24	1
C2-Naphthobenzothiophenes	ND		ng/l	9.71	4.24	1
C3-Naphthobenzothiophenes	ND		ng/l	9.71	4.24	1
C4-Naphthobenzothiophenes	ND		ng/l	9.71	4.24	1
Benz(a)anthracene	ND		ng/l	9.71	5.85	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2476004

Project Number: 60729369 **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.71	6.88	1
C1-Chrysenes	ND		ng/l	9.71	6.88	1
C2-Chrysenes BS	ND		ng/l	9.71	6.88	1
C3-Chrysenes	ND		ng/l	9.71	6.88	1
C4-Chrysenes	ND		ng/l	9.71	6.88	1
Benzo(b)fluoranthene	ND		ng/l	9.71	7.03	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.71	6.27	1
Benzo(a)fluoranthene	ND		ng/l	9.71	6.27	1
Benzo(e)pyrene	ND		ng/l	9.71	6.93	1
Benzo(a)pyrene	ND		ng/l	9.71	7.39	1
Perylene	ND		ng/l	9.71	4.47	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.71	9.32	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.71	6.30	1
Benzo(g,h,i)perylene	ND		ng/l	9.71	6.41	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	62		50-130
Phenanthrene-d10	82		50-130
Benzo(a)pyrene-d12	105		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 02 Batch: WG2015204-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 02 Batch: WG2015204-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 12/31/24 17:37
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 02 Batch: WG2015204-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	67		50-130
Phenanthrene-d10	93		50-130
Benzo(a)pyrene-d12	115		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 02 Batch: WG2015204-2 WG2015204-3								
Naphthalene	103		104		50-130	1		30
2-Methylnaphthalene	90		91		50-130	1		30
Acenaphthylene	92		93		50-130	1		30
Acenaphthene	92		93		50-130	1		30
Fluorene	98		98		50-130	0		30
Phenanthrene	97		98		50-130	1		30
Anthracene	111		110		50-130	1		30
Fluoranthene	89		88		50-130	1		30
Pyrene	97		96		50-130	1		30
Benz(a)anthracene	108		108		50-130	0		30
Chrysene/Triphenylene	102		103		50-130	1		30
Benzo(b)fluoranthene	103		105		50-130	2		30
Benzo(j)+(k)fluoranthene	99		101		50-130	2		30
Benzo(a)pyrene	103		105		50-130	2		30
Indeno(1,2,3-cd)pyrene	109		104		50-130	5		30
Dibenz(a,h)+(a,c)anthracene	107		106		50-130	1		30
Benzo(g,h,i)perylene	103		102		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 02 Batch: WG2015204-2 WG2015204-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	91		94		50-130
Phenanthrene-d10	101		101		50-130
Benzo(a)pyrene-d12	101		103		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/03/25 05:25
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0004	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0004	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0002	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: EDWM | Appendix C. Tier 1 Analysis Tech Memos | **Lab Number:** L2476004

Project Number: 60729369 | **Report Date:** 01/06/25

SAMPLE RESULTS

Lab ID: L2476004-02
Client ID: D1-TW-0001065-24331-N
Sample Location: HONOLULU, HI

Date Collected: 12/24/24 13:39
Date Received: 12/27/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.032	0.027	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	76		50-130
d50-Tetracosane	73		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/02/25 19:35
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 02 Batch: WG2015204-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/02/25 19:35
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 12/31/24 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 02 Batch: WG2015204-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	83		50-130
d50-Tetracosane	80		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2476004
Report Date: 01/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 02 Batch: WG2015204-2 WG2015204-3								
Nonane (C9)	76		68		50-130	11		30
n-Decane (C10)	85		77		50-130	10		30
n-Dodecane (C12)	92		88		50-130	4		30
n-Tetradecane (C14)	93		92		50-130	1		30
n-Hexadecane (C16)	97		97		50-130	0		30
n-Octadecane (C18)	99		100		50-130	1		30
n-Nonadecane (C19)	100		102		50-130	2		30
n-Eicosane (C20)	99		99		50-130	0		30
n-Docosane (C22)	95		95		50-130	0		30
n-Tetracosane (C24)	101		101		50-130	0		30
n-Hexacosane (C26)	94		94		50-130	0		30
n-Octacosane (C28)	95		95		50-130	0		30
n-Triacontane (C30)	94		94		50-130	0		30
n-Hexatriacontane (C36)	86		84		50-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	95		94		50-130
d50-Tetracosane	95		95		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2476004-01A	Vial Ascorbic Acid/HCl preserved	A	NA		2.7	Y	Present/Intact		A2-PIANO8260(14)
L2476004-01B	Vial Ascorbic Acid/HCl preserved	A	NA		2.7	Y	Present/Intact		A2-PIANO8260(14)
L2476004-02A	Vial Ascorbic Acid/HCl preserved	A	NA		2.7	Y	Present/Intact		A2-PIANO8260(14)
L2476004-02B	Vial Ascorbic Acid/HCl preserved	A	NA		2.7	Y	Present/Intact		A2-PIANO8260(14)
L2476004-02C	Vial Ascorbic Acid/HCl preserved	A	NA		2.7	Y	Present/Intact		A2-PIANO8260(14)
L2476004-02D	Amber 1L Na2S2O3	A	7	7	2.7	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2476004-02E	Amber 1L Na2S2O3	A	7	7	2.7	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2476004
Project Number:	60729369	**Report Date:**	01/06/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	EDWM	**Lab Number:**	L2476004
Project Number:	60729369	**Report Date:**	01/06/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2476004
Project Number:	60729369	**Report Date:**	01/06/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2476004
Report Date: 01/06/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

12/27/24 L2476004

A Team

Event: Non-EDWM 50 TPH Resamples

(b) (4)

CHAIN OF CUSTODY PAGE 1 OF 1

LP- 23

Date Rec'd in Lab:

(b) (4) Job #:

Project Information

Project Name: EDWM

Project Location: Honolulu, Hawaii

Project #: 60729389

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information ☐ FAX ☐ ADEx

Data Deliverables ☐ EMAIL ☐ Add'l Deliverables

Billing Information ☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits State/Fed Program: Criteria:

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database.

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	TOTAL # BOTTLES	Sample Specific Comments
76004-01	50-TB-241224-24331-N	12/24/24	0826	DW	(b) (6)	2	0	0	2	Bubble 7.5m ID 1.12 VOC's

12/27/24 L2476004

(b) (4)

A Team

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab:

(b) (4) Job #:

ALP- 32 33

Project Information

Project Name: EDWM

Project Location: Honolulu, Hawaii

Project #: 60729069

Project Manager: (b) (6)

(b) (4) Quote #:

Report Information — ☐ FAX ☐ ADEx

Data Deliverables — ☐ EMAIL ☐ Add'l Deliverables

Billing Information — ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database.

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☒ Lab to do

Preservation
☐ Lab to do
(Please specify below).

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	Sample Specific Comments	TOTAL # BOTTLES
76004-02	D1-TW-0001065-24331-N	12/24/24	1339	DW	(b) (6)	3	1	1		5
					Container Type	V	A	A		
					Preservative	B,I	H	H		

(b) (6)

Relinquished By:	Date/Time	Received By:	Date/Time
(b) (6)	12/24/24 1500	(b) (6)	1500
	12/26/24 1428		
	12/27/24 12:54		12/27/2412:54

151

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

12/26/24, 2:22 PM Package Tracker

Tracking ID: ATRFXEF9MR
Order #2500254
Order references:
Airway Bill: 016-43235673, Flight Number: UA218 UA1450, Charge Code: 60720369.00.30.01, Non-PO Invoice: True, AECOM Account Manager: (b) (6)

(b) (6)

AECOM

QR CODE:
ATMH9ZREYC
Piece 1 of 1

SHIP FROM:
United Air Cargo
122 Harborside Drive
Main Cargo Facility
Boston, MA 02128
United States of America

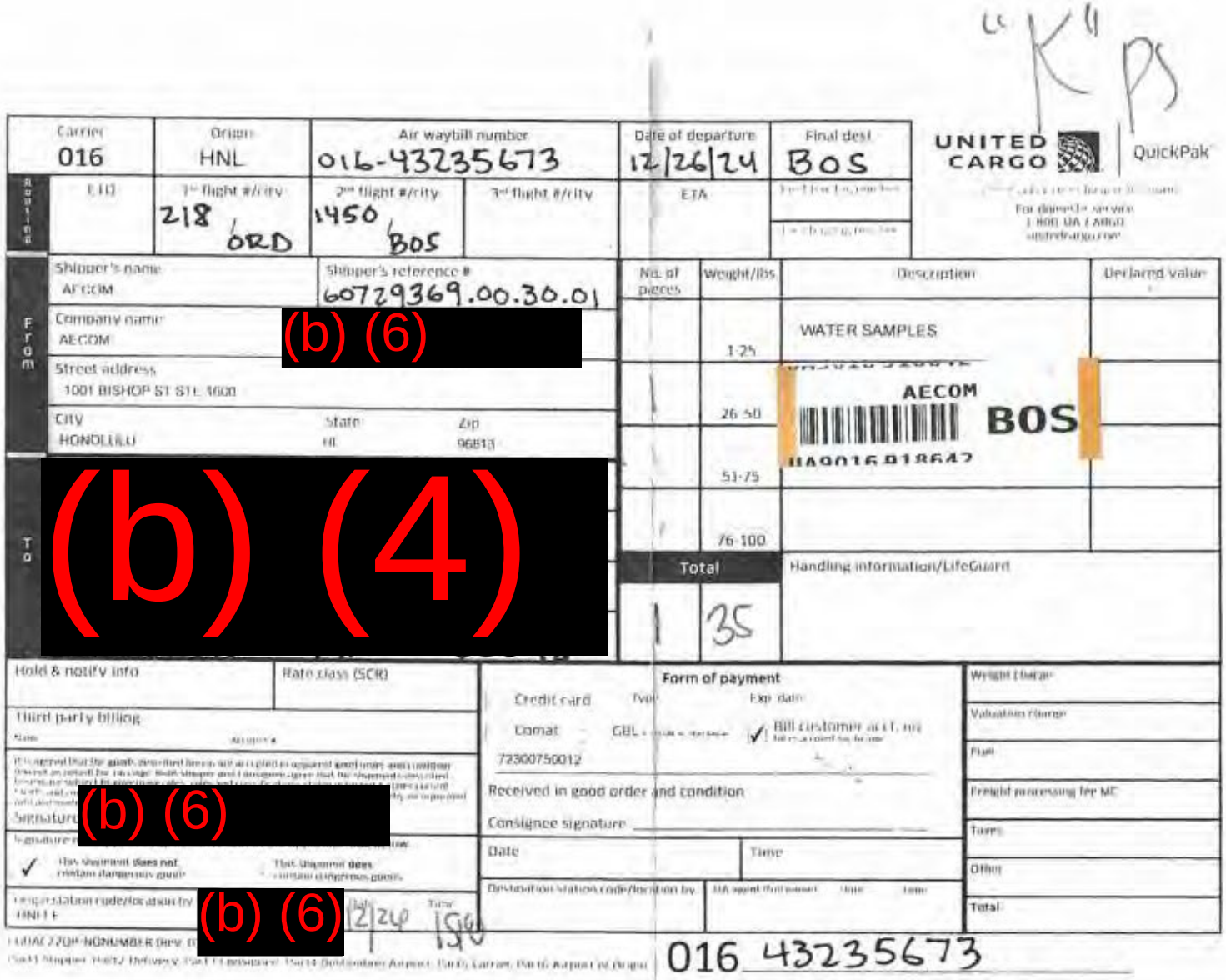
Dimensions: 25.0x14.0x14.0 IN, 50.0 LBS
Commodity: Other - water sample
Pickup Instructions: Call 808 2584213 if there are any issues with pick up.

SHIP TO:

(b) (4)

Delivery Instructions: Call 808 2584213 if there are any issues with pick up.
QDT: Dec 27, 2024 15:15 EST
For questions or information about this shipment, please call 855-524-7772

https://dashboard.airspacetechnologies.com/client/companies/2117/orders/ATRFXEF9MR/package_labels 1/2



Carrier: 016 | Origin: HNL | Air waybill number: 016-43235673 | Date of departure: 12/26/24 | Final dest: BOS

UNITED CARGO QuickPak

Routing: ETD | 1st flight #/city: 218 ORD | 2nd flight #/city: 1450 BOS | 3rd flight #/city | ETA

From: Shipper's name: AECOM | Shipper's reference #: 60729369.00.30.01
Company name: AECOM (b) (6)
Street address: 1001 BISHOP ST STE 1600
City: HONOLULU | State: HI | Zip: 96813

To: (b) (4)

No. of pieces	Weight/lbs	Description	Declared value
	1-25	WATER SAMPLES	
1	26-50	AECOM BOS	
	51-75		
	76-100		
Total 1	35	Handling information/LifeGuard	

Hold & notify info | Rate class (SCR)

Third party billing

Signature (b) (6)

This shipment does not contain dangerous goods. | This shipment does contain dangerous goods.

Origin station code/location by: HNLF (b) (6) Date: 12/26 Time: 1550

Form of payment: Credit card | Type | Exp date | Comat | GBL | Bill customer acct. no. 723007500012

Received in good order and condition

Consignee signature

Date | Time

Destination station code/location by | UA agent (first name) | time | date

Weight charge | Valuation charge | Fuel | Freight processing fee MC | Taxes | Other | Total

016 43235673

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile – A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic – Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO – An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit – The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
aecom.com

March 17, 2025

CDR Benjamin Dunn, P.E.
NAVFAC Hawaii
400 Marshall Road
JBPHH HI 96860-3139

Subject: **Joint Base Pearl Harbor-Hickam Drinking Water EDWM TPH Detection Investigation Sample A3-TW-0016098-24092-N, Zone A3**

Attention CDR Dunn:

On Friday, January 3, 2025, AECOM was notified of an oil range organics (ORO) detection of 53.1 microgram per liter (µg/L) in sample A3-TW-0016098-24092-N, collected from the kitchen sink in the residence at 6474A 102nd Street in Zone A3 on December 30, 2024. The sample was analyzed at (b) (4) for total petroleum hydrocarbons (TPH) via United States Environmental Protection Agency (EPA) SW-846 Method 8015D following micro-extraction by SW-846 Method 3511 and was reported in sample delivery group (SDG) DA69665.

AECOM initiated an investigation to determine if the reported detection was likely to be related to a fuel-related petrogenic source, particularly the November 2021 release of jet propellant-5 (JP-5), and if not, to assign a probable reason for the detection. **After analyzing multiple lines of evidence, AECOM concludes that the substance detected is unrelated to JP-5 and was not present in the site water. The substance detected is likely due to incidental contamination introduced at the time of sample collection or in the laboratory.**

The data reviewed to develop this conclusion included:

- Sample chromatogram
- Reference standard chromatograms
- Laboratory quality control (QC) results
- Enhanced mass spectral evaluation (Tier 1)
- Results of supplemental forensic analyses (Tier 2)
- Results from resampling

Attachment 1 provides a detailed discussion of each line of evidence evaluated and how each of these lines contributed to the conclusion. Attachment 2 outlines the general procedure used to interpret chromatograms for the presence of petroleum hydrocarbons, and Attachment 3 provides a glossary of terms used in the investigation.

Supplementary Analyses

As soon as the detection was noted by laboratory personnel, (b) (4) initiated the Tier 1 mass spectral confirmation procedure outlined in the Extended Drinking Water Monitoring (EDWM) Plan. The procedure entails analyzing the sample and associated method blank extracts obtained in the original extraction using full scan Gas Chromatograph and Mass Spectroscopy (GC/MS) via Method 8270. The details of this procedure are included in the discussion in Attachment 1 and the report generated by (b) (4) is provided as Attachment 4.

At the same time, AECOM directed (b) (4) to send backup containers of the sample to (b) (4) for a quantitative evaluation of petroleum hydrocarbons and potential indicators using the following forensic analytical methods (referred to as Tier 2 analyses):

- SW-846 8260 D – Paraffins-Isoparaffins-Aromatics-Naphthenes-Olefins (PIANO)
- SW-846 8270E-SIM – Polycyclic aromatic hydrocarbons (PAHs) and Alkylated-PAHs
- SW-846 8015D – Saturated Hydrocarbons (SHCs)

These methods provide additional, more detailed information than is possible with the original analyses. For example, when evaluating TPH detections, the PIANO and SHC methods are able to identify and quantitate individual hydrocarbons (with reporting limit [RLs] of approximately 1 µg/L) concentrations rather than reporting one result for an entire carbon range with an RL of 80 µg/L. An extended list of PAHs and their alkylated derivatives can be analyzed using the PAHs and Alkylated-PAHs method, all at very low RLs, providing additional information is key to determining the potential source of any detected analyte. Furthermore, analyzing the same sample by different methods at different laboratories can help to confirm whether an analyte was actually present in the sample or may have been introduced at the time of sampling or in the laboratory. These additional analyses exceed industry standards and go beyond meeting the data quality objectives (DQOs) of the EDWM Plan. **There were no target analyte detections of any kind in the Tier 2 analyses of sample A3-TW-0016098-24092-N, supporting AECOM's assertion that the detected substance was not present in the site water.**

AECOM returned to the residence on January 10, 2025, to resample the kitchen sink and to collect samples from the remaining two sinks in the home: hallway bathroom sink (A3-TW-0016098-24092-N-1) and master bedroom bathroom sink (A3-TW-0016098-24092-N-2). All three samples were submitted to (b) (4) for TPH analysis by Method 8015 and to (b) (4) for Tier 2 analyses. TPH was not detected in any of the samples analyzed at (b) (4). There were no target analyte detections in the Tier 2 analyses other than trace detections of n-pentacosane (C25 alkane) and n-heptacosane (C27 alkane) in the hallway bathroom sink and n-pentatriacontane (C35 alkane) in the master bedroom bathroom sink. Each of these were detected at a concentration less than or equal to 1 µg/L, which were below the RL, and were seen at similar levels in the method blank. These are attributable to common low-level laboratory background and are not related to the residential water sample.

Conclusion

After examining multiple lines of evidence, AECOM concludes that the water collected from the kitchen sink in the residence at 6474A 102nd Street does not contain ORO nor any other petroleum compounds. The original detection of ORO is most likely due to incidental contamination in the field or laboratory. The conclusion that the detection did not originate in the site water is supported by the absence of ORO or any other hydrocarbon in the Tier 2 analysis of the original sample and subsequent samples from all sinks in the residence. Regardless of source, the chromatographic data from (b) (4) confirms that the detected substance is not related to JP-5.

Questions regarding this letter should be addressed to the AECOM Project Manager, (b) (6)

Yours sincerely,

(b) (6)

Senior Project Chemist
(b) (6)

(b) (6)

CLEAN Program Manager
(b) (6)

Attachments

Attachment 1: Technical Review of Sample A3-TW-0016098-24092-N
Attachment 2: Chromatographic Interpretation of DRO and ORO Detections
Attachment 3: Glossary of Terms
Attachment 4: Tier 1 Evaluation, Sample A3-TW-0016098-24092-N
Attachment 5: (b) (4) Laboratory Report L2500383
Attachment 6: (b) (4) Laboratory Report L2501741

Appendix C. Tier 1 Analysis Tech Memos

Attachment 1: Technical Review of Sample A3-TW-0016098-24092-N

All associated laboratory quality control (QC) data were reviewed for evidence of laboratory contamination or other method performance issues that may have impacted the ORO result in sample A3-TW-0016098-24092-N. Items reviewed included:

- Method blank results
- Blank spike (BS)/blank spike duplicate (BSD) recoveries
- Matrix spike (MS) recoveries
- Surrogate standard recoveries

ORO was not detected above the detection limit (DL) in the method blank. Associated results in the BS, BSD, MS, and surrogate standards, were within acceptance limits.

The chromatogram for A3-TW-0016098-24092-N was reviewed following the procedure outlined in Appendix B, *Chromatographic Interpretation of DRO and ORO Detections*. The sample chromatogram is shown in Figure 1. Figure 2 displays the chromatogram of the laboratory's retention time (RT) marker reference standard with each of the carbon numbers labeled and Figure 3 displays the laboratory's JP-5 standard chromatogram. As it can be difficult to compare peak patterns on separate chromatograms, the laboratory provided overlays of the sample with the RT marker standard (Figure 4), JP-5 (Figure 5), and the laboratory's ORO standard (Figure 6).

The sample chromatogram shows an unresolved complex mixture (UCM) that begins eluting at approximately the C24 range and extends beyond C40. Since JP-5 elutes in the C10 to C16 range (Figure 3), there is no overlap with the substance found in the sample and therefore is not related. This is further demonstrated in Figure 5, which presents the sample (black) overlayed with the JP-5 standard (blue).

AECOM also evaluated the possibility that the sample was inadvertently contaminated with the laboratory's ORO standard solution during preparation or analysis. Figure 6 presents an overlay of the sample (black) with the laboratory's ORO standard (blue). The patterns are markedly different, with the ORO standard showing a distinctive bell-shaped pattern beginning just after 3.2 minutes, reaching a maximum response at shortly beyond 4.0 minutes and returning to baseline at 5.2 minutes. The sample produces a broader, less defined peak pattern that does not return to baseline until approximately 6.0 minutes.

Figure 1. Sample DA69665-1, A3-TW-0016098-24092-N

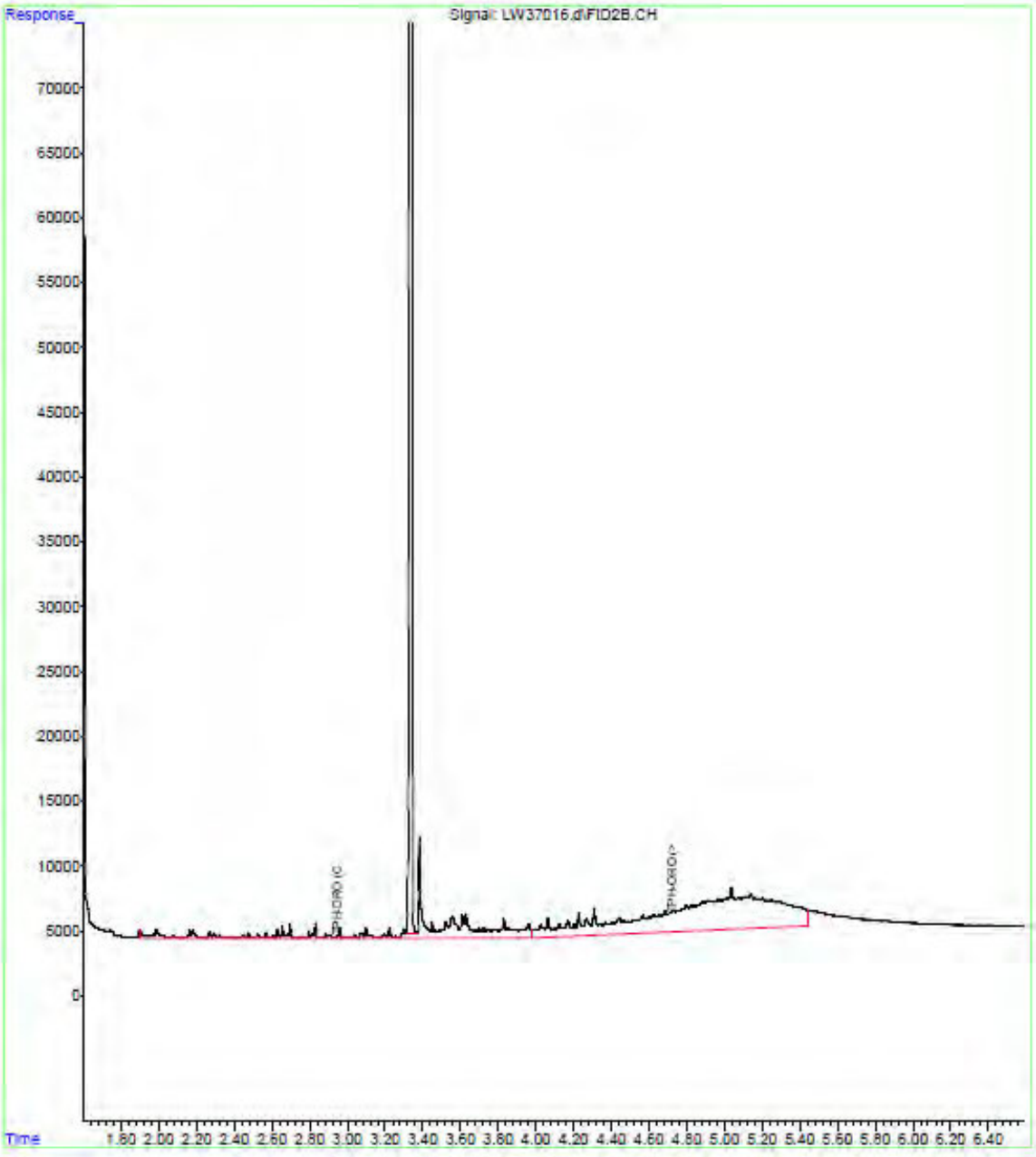


Figure 2. Retention Time Marker Standard with Carbon Numbers

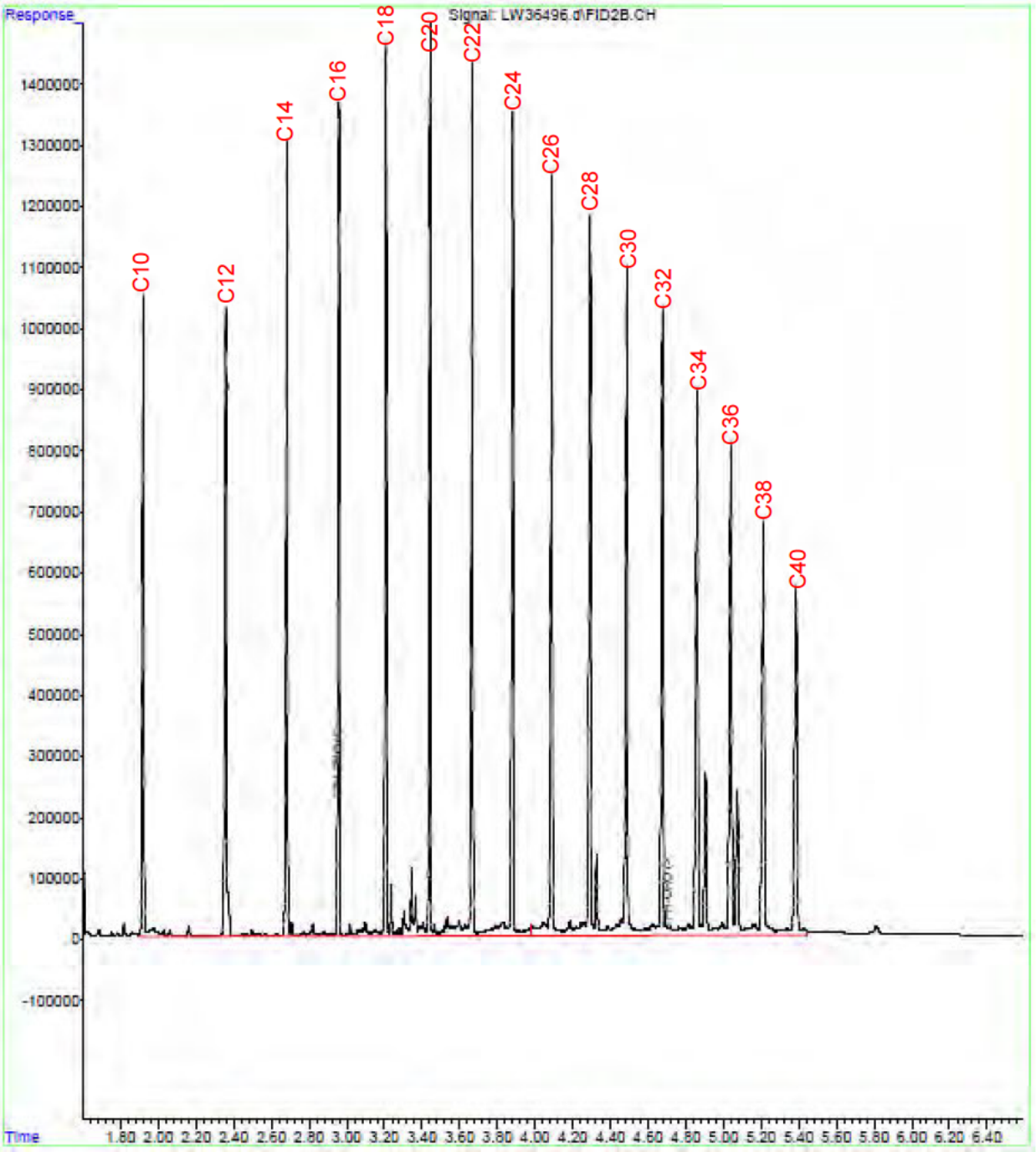


Figure 3. JP-5 Standard

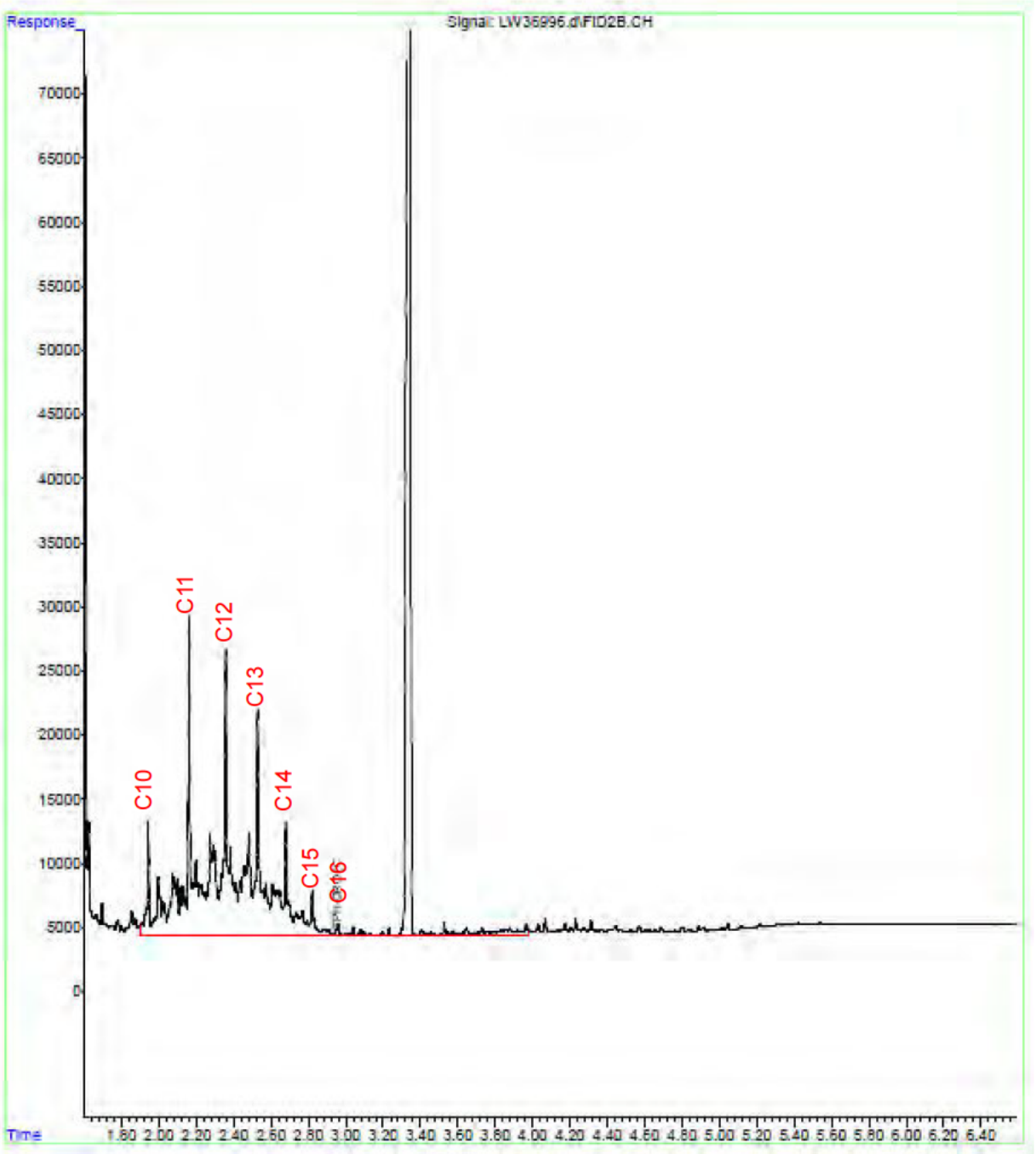


Figure 4. Sample DA69665-1, A3-TW-0016098-24092-N (black), Overlayed with RT Standard (blue)

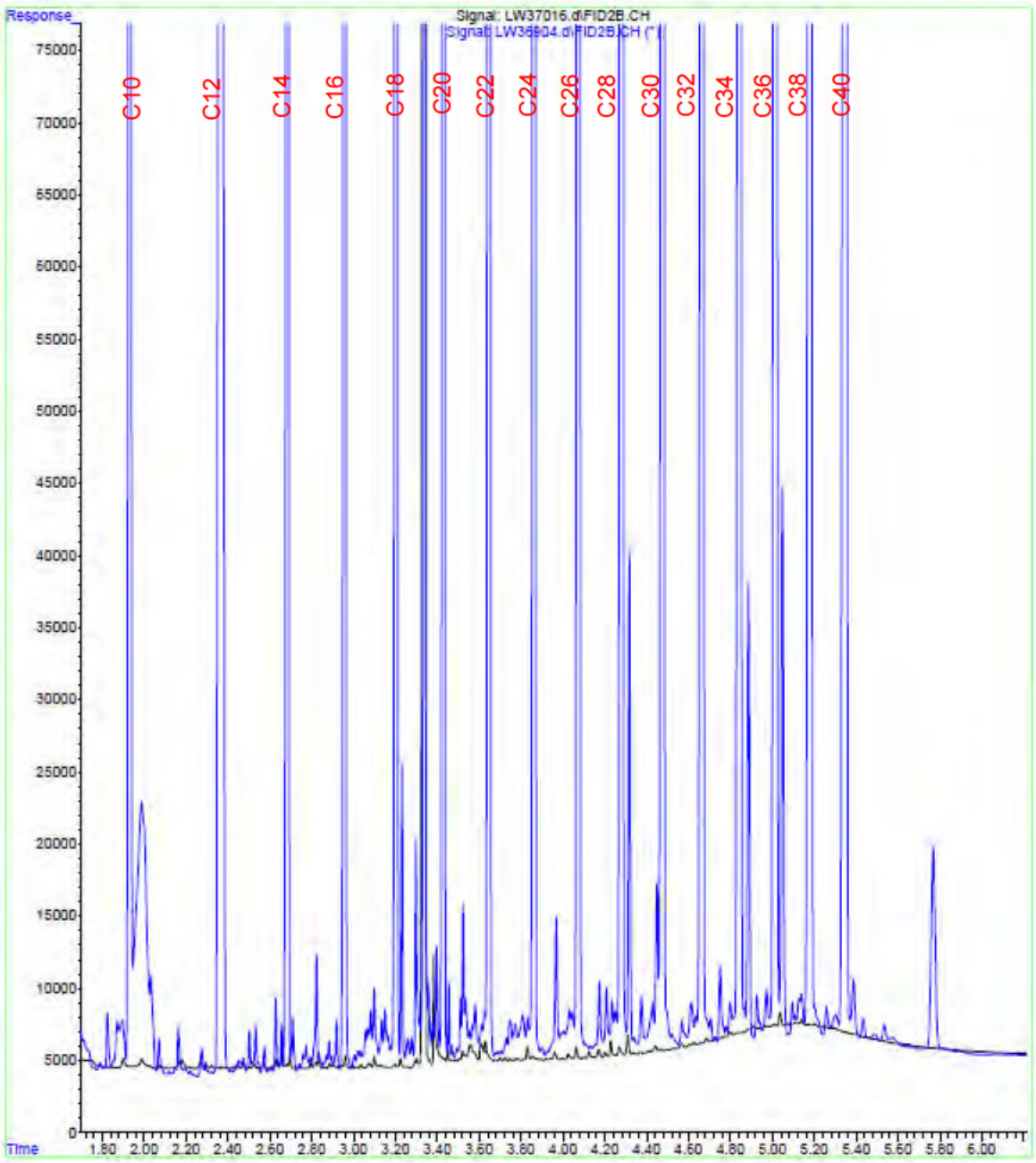


Figure 5. Sample DA69665-1, A3-TW-0016098-24092-N (black), Overlayed with JP-5 Standard (blue)

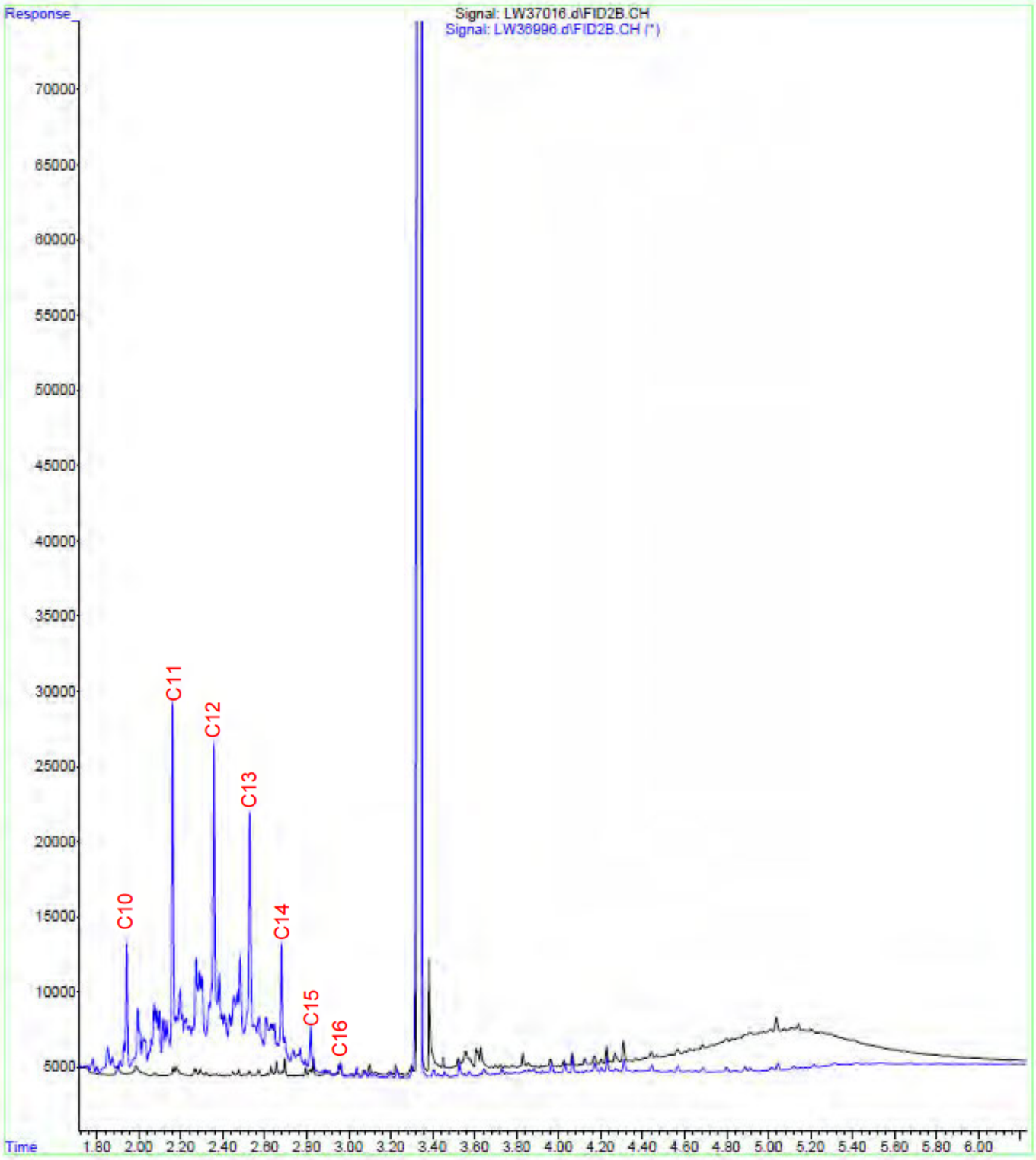
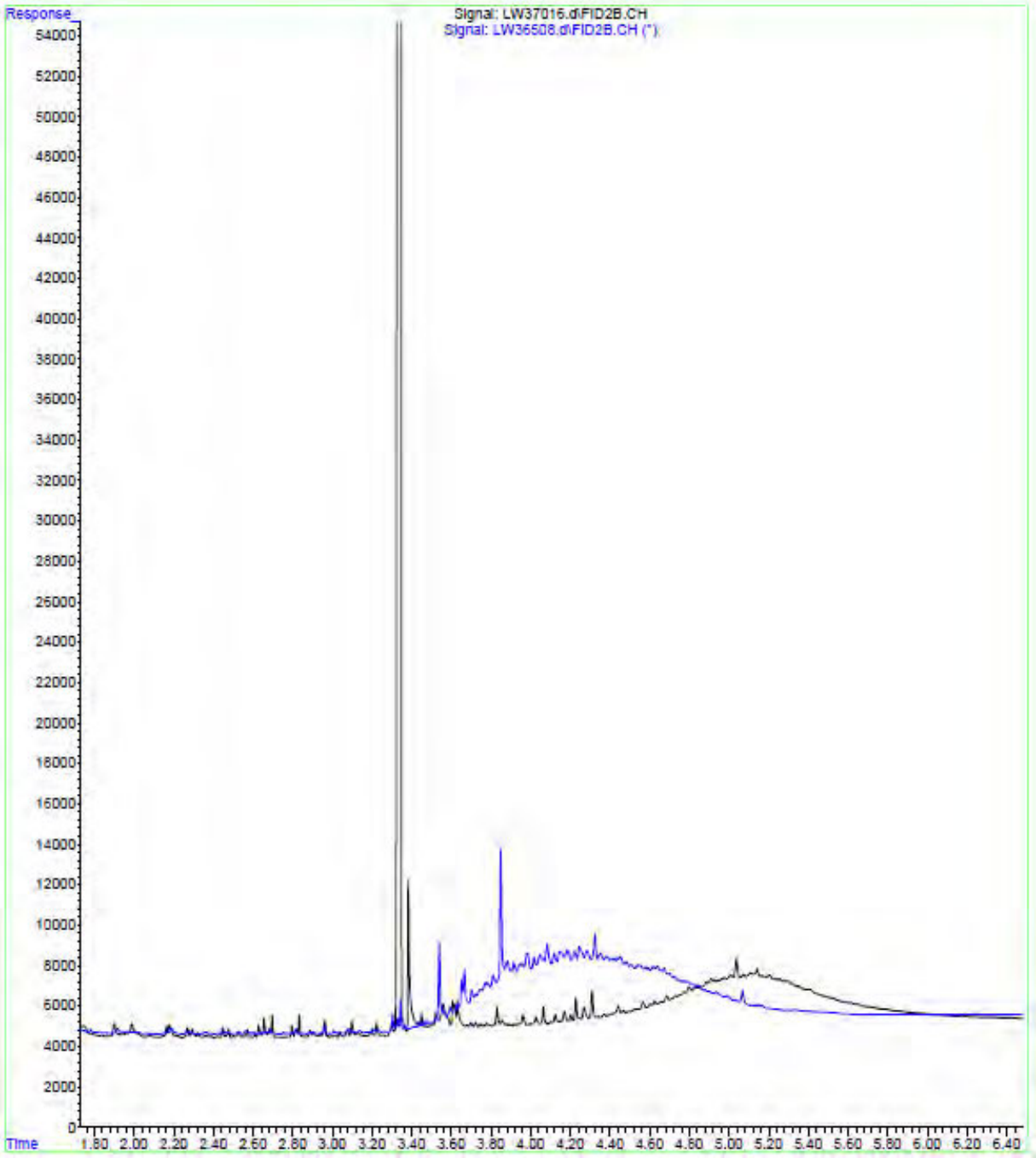


Figure 6. Sample DA69665-1, A3-TW-0016098-24092-N (black), Overlayed with ORO Standard (blue)



The sample extract was further evaluated using the Tier 1 mass spectral confirmation procedure outlined in the Extended Drinking Water Monitoring (EDWM) plan. The procedure entails analyzing the sample and associated method blank extracts obtained in the original extraction using full scan Gas Chromatograph and Mass Spectroscopy (GC/MS) via Method 8270. The resulting total ion chromatograms are evaluated as follows:

1) For the sample, retain all peaks that are above a 3:1 signal-to-noise (S:N) ratio.

2) For peaks retained from Step 1, retain all peaks that have a response greater than 5 times that found in the method blank.

3) Obtain the mass spectrum and perform a background subtraction (including all blank contamination present below the MRL/MDL) for each peak retained from Step 2.

4) Perform a Tentatively Identified Compound (TIC) search evaluation on each peak retained from Step 3 by comparing the corrected mass spectrum to a National Institute of Standards and Technology (NIST) mass spectral library. Retain the top 5 probability matches for each. Retain a list of all TICs with an 80% probability match or higher.

5) Evaluate chromatograms, Extraction Limited Ion Profile Screening (ELIPS), and additional chemistry data from the laboratory to determine if the detected TPH is JP-5/other fuel-related analytes or is associated TPH-O, and/or with “naturally occurring” hydrocarbons.

The results of this evaluation further support the conclusion that the TPH detection is due to the presence of artifacts introduced in the laboratory. The ELIPS selected ion chromatogram reviews did not indicate the presence of specific known fresh or weathered fuel products. The detection of trace n-alkanes and an unresolved complex mixture (UCM) of saturated hydrocarbons in the C22-C40 carbon range may indicate a heavy lubricating oil. The presence of possible phthalate esters, fatty acids (n-hexadecenoic and n-octadecanoic), and many siloxanes indicates that accidental contamination from skin or laboratory glove contact during laboratory sample preparation is the most likely cause of the ORO detection.

Sample volume for both the original kitchen sink sample collected on December 30, 2024 and the samples from all three sinks in the residence collected on January 10, 2025 were submitted to (b) (4) [redacted] for the Tier 2 analyses identified in the EDWM plan, specifically PIANO Volatile Organics by SW-846 Method 8260D, Parent and Alkylated Polyaromatic Hydrocarbons (P&A PAHs) by SW-846 Method 8270E with selected ion monitoring (SIM), and Saturated Hydrocarbons (SHCs) by SW-846 Method 8015D (modified). All results were non-detect in all analyses in the original sample and in all subsequent samples other than trace detections of n-pentacosane (C25 alkane) and n-heptacosane (C27 alkane) in the hallway bathroom sink and n-pentatriacontane (C35 alkane) in the master bedroom bathroom sink. Each of these were detected at a concentration less than or equal to 1 µg/L, were below the RL, and were seen at similar levels in the method blank. These are attributable to common low-level laboratory background and not the residential water sample. The complete lack of any C24-C40 hydrocarbon detections (other than the trace detections noted above) or unresolved complex mixture supports the conclusion that the original detection was the result of incidental contamination in the field or laboratory, and not from the water in the residence.

AECOM has concluded that the chromatographic evidence from the original, Tier 1, and Tier 2 analyses points to incidental contamination of the original sample with a mixture of compounds unrelated to JP-5 or any other fuel product. It is not known with certainty whether the artifact was introduced in the field or in the laboratory; however, AECOM concludes that the most likely source was incidental contact in the laboratory during sample preparation.

There is no evidence of a systematic contamination issue in the laboratory. Method blanks have been free of ORO detections, and laboratory contamination has been suspected in fewer than ten of the more than 4000 samples collected under EDWM to date. (b) (4) laboratory management regularly reviews good laboratory practices, including steps necessary to minimize incidental contamination, with laboratory personnel. No additional action is recommended at this time.

Appendix C. Tier 1 Analysis Tech Memos

Attachment 2: Chromatographic Interpretation of DRO and ORO Detections

Appendix C. Tier 1 Analysis Tech Memos

Chromatographic Interpretation of DRO and ORO Detections

Gather the following chromatograms

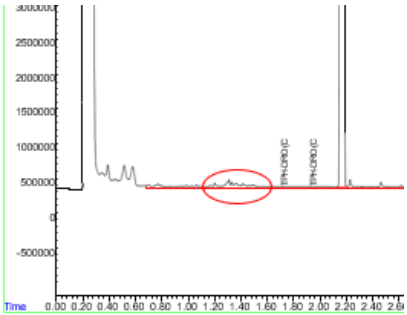
1) Sample of interest (with quantitation report)
2) Method blank (with quantitation report)
3) Retention time standard – must be analyzed in the same analytical batch as the sample
4) JP-5 standard - must be analyzed in the same analytical batch as the sample
5) DRO (Diesel Fuel #2) and/or ORO (Motor Oil) calibration standards

Comparison with JP-5, DRO, and ORO Standards

1) Label the carbon numbers of the prominent n-alkanes in the JP-5 and Diesel Fuel #2 standards, using the retention time (RT) standard provided in the data package as a guide.
2) Examine the sample chromatogram in the RT window corresponding to the first and last n-alkanes identified in the JP-5 and Diesel Fuel standards (C-10 to C-20).
    a. If the RTs of any of the peaks correspond to the n-alkanes identified in either standard, label them with the appropriate carbon numbers.
    b. Make note of which alkanes may be present based on RT and those which seem to be missing, e.g., C-12 RT match; no evidence of C-10, C-11, C-13 through C-20.
    c. If none of the n-alkanes are presumptively present, it is extremely unlikely that observed peaks are fuel related. If a fuel related hydrocarbon mixture is present, the largest peaks in a given region would be the n-alkanes.
3) Although JP-5 components do not extend into the ORO range of >C-24 – C-40, compare all peaks in the sample chromatogram with the RTs of the n-alkanes. Discrete peaks are not as evident in the Motor Oil standard, so the RTs from the retention time standard are used as a guide.

Comparison with Method Blank (MB)

1) Review the MB quantitation report to determine if DRO and/or ORO were detected. The quantitation report will include detections that are below the MDL and reported as non-detect by the laboratory as well as concentrations above the MDL that are reported by the laboratory.
2) Compare the concentration of the MB to the samples. Sample results that are within two to three times the concentration in the MB may be entirely attributable to batch contamination.
3) Review the MB chromatogram, looking for peaks eluting in the same retention time range as the standards.
    a. If the RTs of any of the peaks correspond to the n-alkanes identified in the reference standards, label the carbon numbers.
    b. Look for distinguishable peak patterns. For example, many method blanks have been found to contain the following grouping of peaks falling roughly between 1.04 and 1.56 minutes.



(Note that retention times are specific to a given instrument under a particular set of operating conditions. It is essential that all comparisons of retention times and patterns be done under identical conditions.)

c. Look for the same pattern in the associated samples. While it is not possible to determine the areas of individual portions of the chromatograms from the data package, a rough assessment of the relative magnitude can be made.

Additional Qualitative Assessment

1) Review the sample chromatograms looking for distinct peaks or groupings of peaks as discussed in the MB evaluation, above.
2) If found, look to see if the same peaks/patterns are present in the chromatograms of other samples prepared and analyzed in the same batch. Note that a batch may contain samples reported in multiple sample delivery groups (SDGs). All samples from the batch should be reviewed.

Attachment 3: Glossary of Terms

Appendix C. Tier 1 Analysis Tech Memos

Glossary of Terms

Alkanes – A series of compounds that contain only carbon and hydrogen atoms with single covalent bonds. These are also known as saturated hydrocarbons.

Calibration Curve – A plot of response vs concentration that is used in calculating the concentration in an unknown sample.

Calibration Standards – A mixture of compounds of known concentrations spanning a range that are analyzed to create a calibration curve.

Carbon Number – The number of carbon atoms contained in a compound. For example, a C10 compound contains 10 carbon atoms.

Chromatogram – A plot of retention time versus detector signal intensity. Detector signal intensity is proportional to concentration.

Diesel Range Organics (DRO) – The DRO area is defined for the JBPHH LTM and EDWM programs as the total area of all peaks that come out (elute) between the observed retention times of C10 (decane, the 10 carbon, straight chain alkane) and the retention time of C24 (tetracosane, the 24 carbon, straight chain alkane). Different carbon ranges may be defined for other programs.

Elute – To pass through the chromatographic column to the detector.

Elution time – The time it takes a particular chemical to reach the detector after injection onto a chromatographic column. Used interchangeably with the term retention time in gas chromatography.

Flame Ionization Detector (FID) – A non-specific detector frequently used in conjunction with gas chromatography. It has good sensitivity and is a universal detector for organic compounds. However, since all organic compounds will give a response, it is not very selective and co-eluting components in a sample will interfere with the analysis.

Gas Chromatography (GC) – An analytical technique used to separate and detect the chemical components of a sample mixture to determine their presence or absence and/or quantities.

Gas Chromatography/Mass Spectrometry (GC/MS) – An analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

Gasoline Range Organics (GRO) – The GRO area is defined for the Joint Base Pearl Harbor-Hickam (JBPHH) Long-Term Monitoring (LTM) and Extended Drinking Water Monitoring (EDWM) programs as the total area of all peaks that come out (elute) between the observed retention times of C5 and C12 n-alkanes. Different carbon ranges may be defined for other programs.

Hydrocarbon – An organic chemical compound composed solely of hydrogen and carbon atoms.

Internal Standard – A compound of known concentration that is added to standards, samples, and blanks before analysis. It is used to adjust for matrix effects and/or variability in instrument response.

Jet Propellant 5 (JP-5) – A kerosene type fuel with a high flashpoint and a narrow distillation range defined by the military specification in MIL-DTL-5624W. Greater than 99% of the integrated hydrocarbon mass elutes between the retention times of C9 and C16 n-alkanes.

Mass Spectrometry (MS) – An analytical technique that is used to measure the mass-to-charge ratio of ions. The results are presented as a mass spectrum, a plot of intensity as a function of the mass-to-charge ratio. These spectra are used to determine the elemental or isotopic signature of a sample, the masses of particles and of molecules, and to elucidate the chemical identity or structure of molecules and other chemical compounds.

Mass Spectral Profile - A technique used to analyze the composition of chemical substances by measuring the mass-to-charge ratio (m/z) of ions. This profile is used to identify individual components within a sample by displaying their unique mass spectra.

n-Alkanes – Alkanes in which all carbon atoms are bonded to each other in a linear pattern with a single covalent bond.

Oil Range Organics (ORO) – The ORO area is defined for the JBPHH LTM and EDWM programs as the total area of peaks that elute between the observed retention times of C24 and C40 n-alkanes. Different carbon ranges may be defined for other programs.

Petrogenic– Refers to a substance, typically a hydrocarbon, derived from fossil fuels like petroleum, coal, and natural gas.

PIANO - An acronym for n-Paraffins (P), Isoparaffins (I), Aromatics (A), Naphthenes (N) and Olefins (O), A PIANO analysis is a laboratory procedure using gas chromatography coupled with mass spectrometry (GC/MS) for the identification and measurement of light-end refined products such as gasoline or jet fuel with boiling points up to 250 °C.

Polycyclic Aromatic Hydrocarbon (PAH) – A hydrocarbon composed of multiple aromatic (benzene-like) rings fused together. These compounds are formed primarily through the incomplete combustion of organic materials such as coal, oil, gas, wood, or other carbon-containing substances. They can be water soluble and fat soluble and are stable compounds that can persist in the environment.

Pyrogenic – Refers to a substance created by combustion of fossil fuels or organic matter.

Reporting Limit - The lowest concentration of a compound that can be accurately reported in a sample. The lowest standard in the calibration curve is set at or below this level.

Retention Time (RT) – The time it takes for a compound to pass through a column and be detected after a sample is injected. Used interchangeably with the term elution time in gas chromatography.

RT Marker – A standard containing n-alkanes with different numbers of carbon atoms and are analyzed with each run for the purpose of determining the beginning and end of carbon ranges of interest.

Standard Operating Procedure (SOP) – A list of prescribed steps that outlines how to perform a task.

Surrogate – A compound similar to the target compounds being analyzed that is added to the sample prior to preparation and analysis at a known concentration. Used to evaluate extraction efficiency and matrix interference on a sample specific basis.

Target Compound – A compound included in calibration standards and may be quantitatively evaluated.

Tentatively Identified Compound (TIC) – A compound that is detected in a sample but was not included in the instrument calibration standards. Its identity can often be determined by comparing its mass spectrum with those in a library.

Total Petroleum Hydrocarbon Analysis by SW-846 Method 8015 – An analytical method that uses gas chromatography to separate chemical compounds and a flame ionization detector to measure the signal. Quantitation is performed by summing the entire area between specified n-alkane retention times.

Total Petroleum Hydrocarbons (TPH) – The sum of all petroleum hydrocarbons detected in a sample.

Appendix C. Tier 1 Analysis Tech Memos

Attachment 4: Tier 1 Evaluation, Sample A3-TW-0016098-24092-N

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

01/10/25

The results set forth herein are provided by (b) (4).

e-Hardcopy 2.0
Automated Report

Technical Report for

(b) (4)

AECOMHIH: N6274224F0139

AECOMHIH28355

(b) (4) Job Number: DA69665T

Sampling Date: 12/30/24

Report to:

(b) (4)

Total number of pages in report: **186**

NELAP ACCREDITED TNI LABORATORY

(b) (6)
Technical Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Client Service contact: (b) (6)
(b) (4)

This report shall not be reproduced, except in its entirety, without the written approval of (b) (4).
Test results relate only to samples analyzed.

(b) (4)

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(b) (4) .

Sample Summary

(b) (4)

Job No: DA69665T

AECOMHIH: N6274224F0139
Project No: AECOMHIH28355

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
DA69665-1TA	12/30/24	09:08	(b) (6)	2/31/24	AQ	Water	A3-TW-0016098-24092-N
DA69665-7T	12/30/24	00:00	(b) (6)	2/31/24	AQ	Water	MB:OP26937 METHOD BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: (b) (4) **Job No:** DA69665T

Site: AECOMHIH: N6274224F0139 **Report Date** 1/10/2025 11:44:29 A

On 12/31/2024, 2 sample extract(s) were received at (b) (4)) for ELIPS - Tier 1 Analysis. The samples were intact and properly preserved, unless noted below. An (b) (4) Job Number of DA69665T was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method SW846 8270E

Matrix: AQ **Batch ID:** OP60797

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- All extracts were analyzed within method holding times.
- Sample(s) DA69665-1TA, DA69665-7T have surrogates outside control limits. Surrogate not evaluated.
- OP60797-MB1: ELIPS - TIER 1
- OP60797-BS1: ELIPS - TIER 1
- OP60797-MB1 for Terphenyl-d14: Surrogate not evaluated.
- OP60797-BS1 for Terphenyl-d14: Surrogate not evaluated.

(b) (4) certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting (b) (4) Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

(b) (4) is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by (b) (4) indicated via signature on the report cover.

Summary of Hits

Job Number: DA69665T
Account: (b) (4)
Project: AECOMHIH: N6274224F0139
Collected: 12/30/24

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

DA69665-1TA A3-TW-0016098-24092-N

No hits reported in this sample.

DA69665-7T MB:OP26937 METHOD BLANK

No hits reported in this sample.

(b) (4)

Sample Results

Report of Analysis

(b) (4) .

Report of Analysis

Client Sample ID:	A3-TW-0016098-24092-N		
Lab Sample ID:	DA69665-1TA	**Date Sampled:**	12/30/24
Matrix:	AQ - Water	**Date Received:**	12/31/24
Method:	SW846 8270E SW846 8151/3510C	**Percent Solids:**	n/a
Project:	AECOMHIH: N6274224F0139		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	E3E126510.D	1	01/09/25 16:17	(b) (6)	01/09/25 11:30	OP60797	E3E5888
Run #2							

	Initial Volume	Final Volume
Run #1	1.0 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1718-51-0	Terphenyl-d14	0% [b]		10-127%

(a) ELIPS - TIER 1
(b) Surrogate not evaluated.

U = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

(b) (4)

(b) (4) .

Report of Analysis

Client Sample ID:	MB:OP26937 METHOD BLANK		
Lab Sample ID:	DA69665-7T	**Date Sampled:**	12/30/24
Matrix:	AQ - Water	**Date Received:**	12/31/24
Method:	SW846 8270E SW846 8151/3510C	**Percent Solids:**	n/a
Project:	AECOMHIH: N6274224F0139		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	E3E126509.D	1	01/09/25 15:43	(b) (6)	01/09/25 11:30	OP60797	E3E5888
Run #2							

	Initial Volume	Final Volume
Run #1	1.0 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1718-51-0	Terphenyl-d14	0% [b]		10-127%

(a) ELIPS - TIER 1
(b) Surrogate not evaluated.

U = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

(b) (4)

Section 5

5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Sample Tracking Chronicle

(b) (4) .

Internal Sample Tracking Chronicle

(b) (4)

Job No: DA69665T

AECOMHIH: N6274224F0139
Project No: AECOMHIH28355

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
DA69665-7TC	Collected: 30-DEC-24 00:00 By: (b) (6)			Received: 31-DEC-24	By: EC	
MB:OP26937 METHOD BLANK						
DA69665-7TS	SW846 8270E	09-JAN-25 15:43	(b) (6)	09-JAN-25	NAP	AB8270SL
DA69665-1TC	Collected: 30-DEC-24 09:08 By: (b) (6)			Received: 31-DEC-24	By: EC	
A3-TW-0016098-24092-N						
DA69665-1TS	SW846 8270E	09-JAN-25 16:17	(b) (6)	09-JAN-25	NAP	AB8270SL

(b) (4)

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: DA69665T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch

The QC reported here applies to the following samples: **Method:** SW846 8270E

DA69665-7T, DA69665-1TA

CAS No.	Compound	Result	RL	Units	Q

Blank Spike Summary

Job Number: DA69665T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch

The QC reported here applies to the following samples: **Method:** SW846 8270E

DA69665-7T, DA69665-1TA

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: DA69665T
Account: ALMS (b) (4)
Project: AECOMHIH: N6274224F0139

Method: SW846 8270E **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
DA69665-7T	E3E126509.D	0* [a]
DA69665-1TA	E3E126510.D	0* [a]
OP60797-BS1	E3E126506.D	0* [a]
OP60797-MB1	E3E126505.D	0* [a]

Surrogate Compounds	Recovery Limits
S1 = Terphenyl-d14	10-127%

(a) Surrogate not evaluated.

Run Sequence Report

Job Number: DA69665T
Account: ALMS(b) (4)
Project: AECOMHIH: N6274224F0139

Run ID: E3E5888	**Method:** SW846 8270E	**Instrument ID:** GCMS3E

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP60797-MB1	E3E126505.D	01/09/25 13:29	OP60797	Method Blank
OP60797-BS1	E3E126506.D	01/09/25 14:03	OP60797	Blank Spike
DA69665-7T	E3E126509.D	01/09/25 15:43	OP60797	MB:OP26937 METHOD BLANK
DA69665-1TA	E3E126510.D	01/09/25 16:17	OP60797	A3-TW-0016098-24092-N

(b) (4)

MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 10 10:25:24 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	10.116	230	30447261m	30447261.00		0.00
Target Compounds						Qvalue
8) Sesquiterpanes	14.148	123	462188m	462188.00		
11) Cyclic Isoprenoid	10.832	113	469278m	469278.00		
13) Saturated Hydrocarbons	13.485	85	1385792m	1385792.00	ug/l	
24) n-Hexadecanoic Acid	10.228	256	59242m	59242.00		
25) n-Octadecanoic Acid	10.838	284	59129m	59129.00		
29) n-Alkane	14.122	57	2629942m	2629942.00		
34) n-Tetradecane (C14)	8.281	57	15323	15323.00		93
35) n-Hexadecane (C16)	8.976	57	6118	6118.00	#	1
47) n-Triacontane (C30)	12.956	57	73944m	73944.00		
48) n-Doatriacontane (C32)	13.485	57	94784m	94784.00		
49) n-Tetratriacontane (C34)	14.122	57	122586m	122586.00		
50) n-Hexatriacontane (C36)	14.935	57	123852m	123852.00		
51) n-Octatriacontane (C38)	16.010	57	114860m	114860.00		
52) n-Tetracontane (C40)	17.481	57	122515m	122515.00		
53) Siloxane	7.858	429	365145m	365145.00		

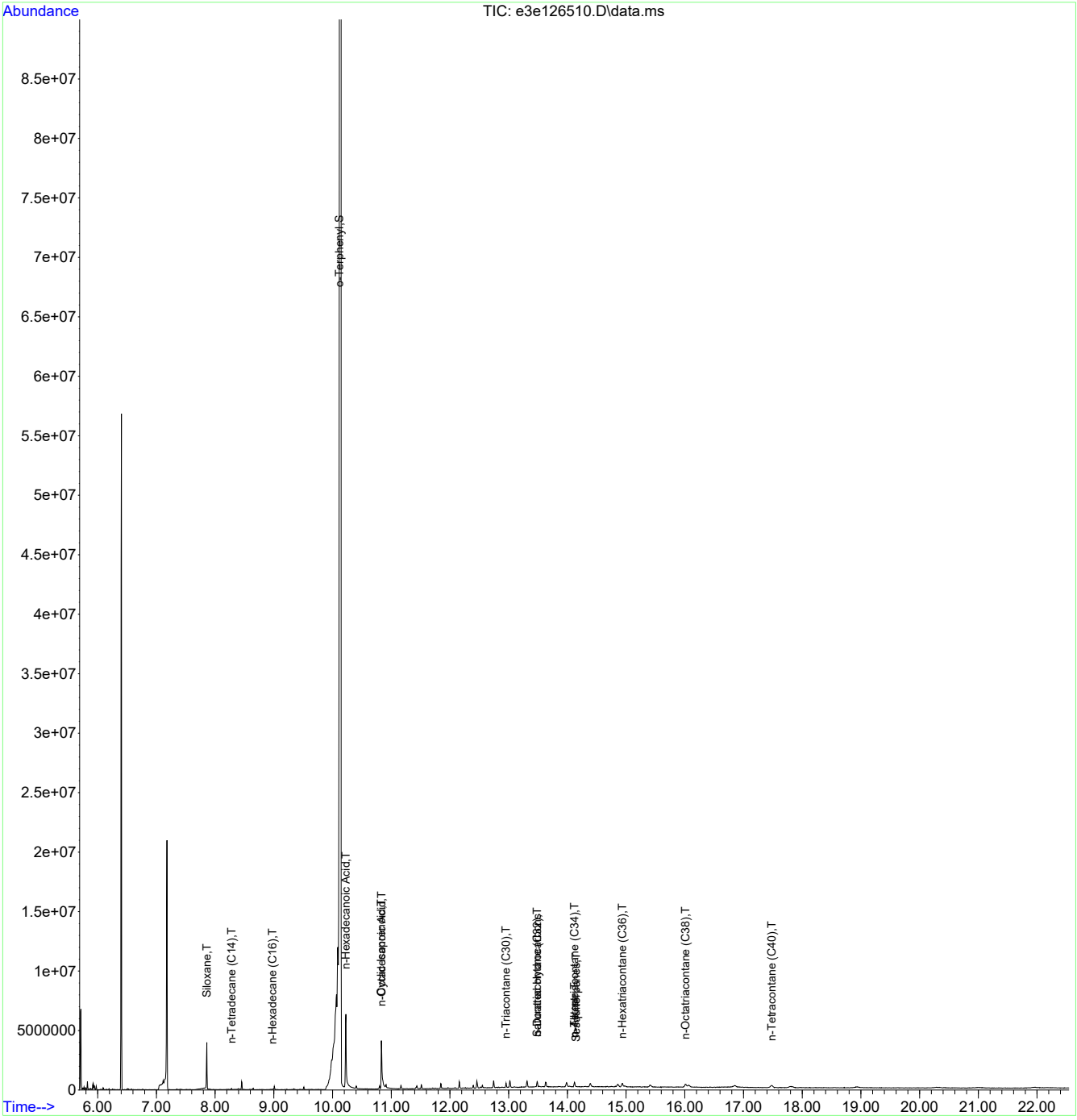
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.1 7

Quantitation Report (QT Reviewed)

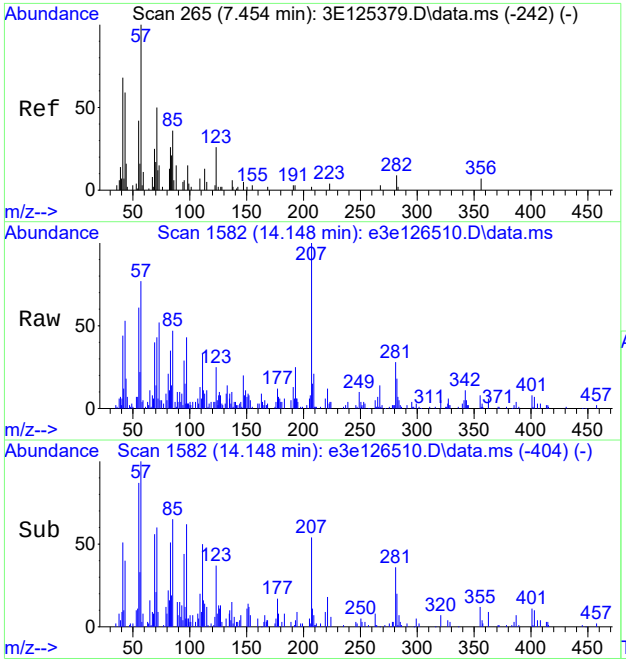
Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 10 10:25:24 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



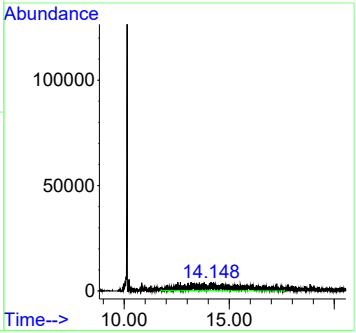
(b) (4)

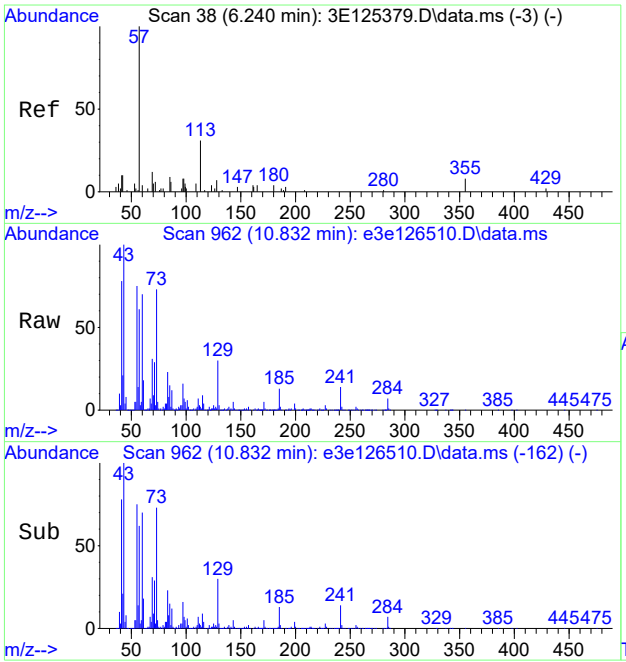
Appendix C. Tier 1 Analysis Tech Memos



#8
Sesquiterpanes
Concen: 462188.00 m
RT: 14.148 min Scan# 1582
Delta R.T. 6.199 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

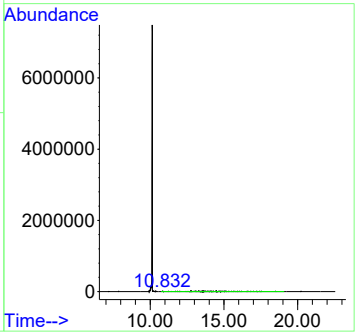
Tgt Ion:123 Resp: 462188

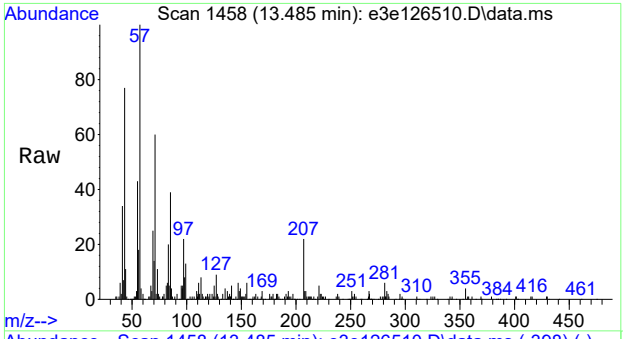




#11
Cyclic Isoprenoid
Concen: 469278.00 m
RT: 10.832 min Scan# 962
Delta R.T. 4.177 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion:113 Resp: 469278

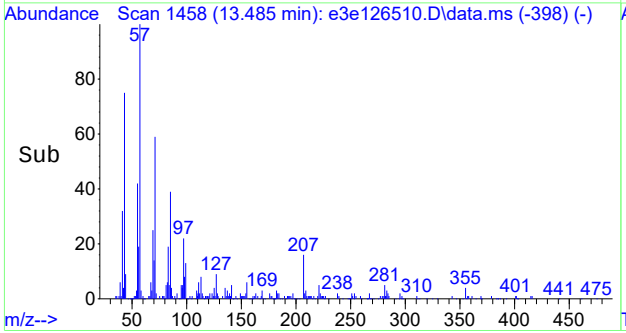


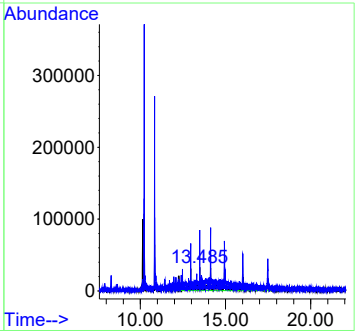


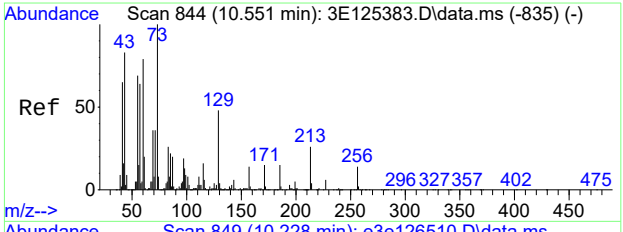
#13
Saturated Hydrocarbons
Concen: 1385792.00 ug/l m
RT: 13.485 min Scan# 1458
Delta R.T. 5.568 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 85 Resp: 1385792

Ion	Ratio	Lower	Upper
85	100		
83	0.2	0.0	0.0#
57	0.6	0.0	0.0#



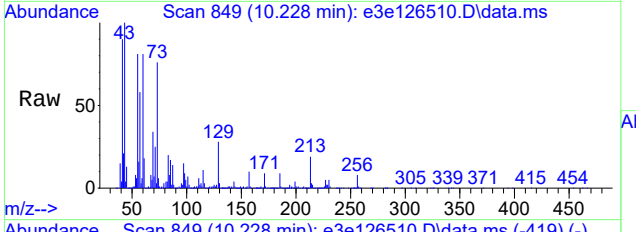


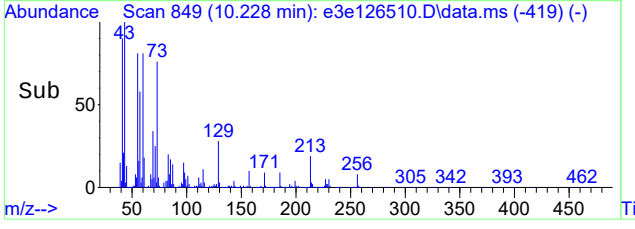


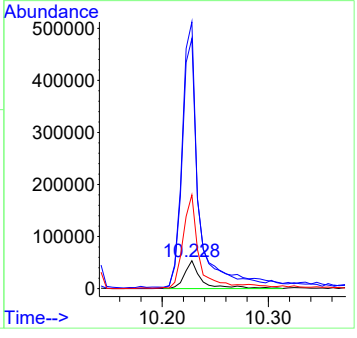
#24
n-Hexadecanoic Acid
Concen: 59242.00 m
RT: 10.228 min Scan# 849
Delta R.T. 2.201 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

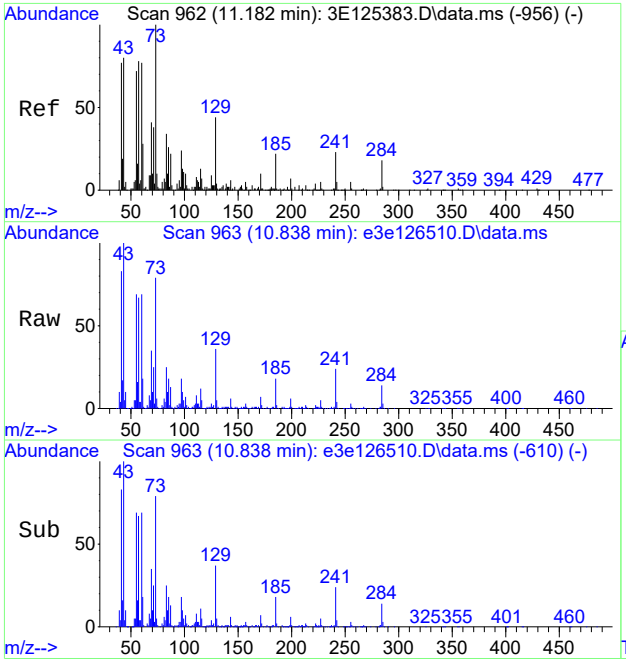
Tgt Ion:256 Resp: 59242

Ion	Ratio	Lower	Upper
256	100		
73	0.0	97.8	137.8#
60	0.0	30.7	70.7#
129	0.0	16.1	56.1#





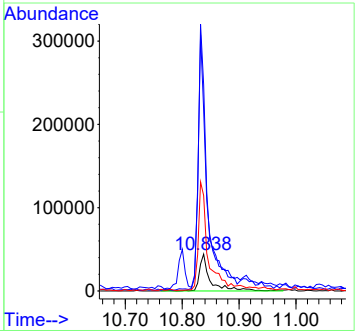


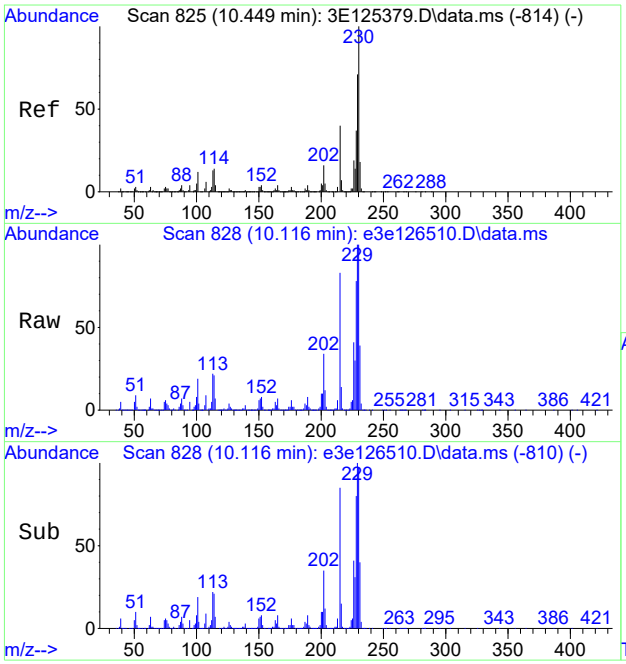


#25
n-Octadecanoic Acid
Concen: 59129.00 m
RT: 10.838 min Scan# 963
Delta R.T. 1.789 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion:284 Resp: 59129

Ion	Ratio	Lower	Upper
284	100		
73	0.0	42.7	82.7#
60	0.0	26.4	66.4#
129	0.0	30.0	70.0#

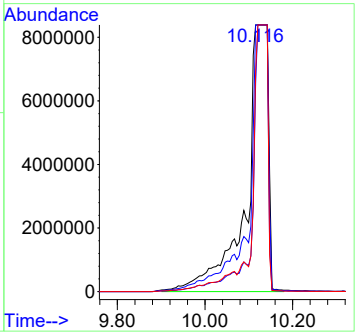


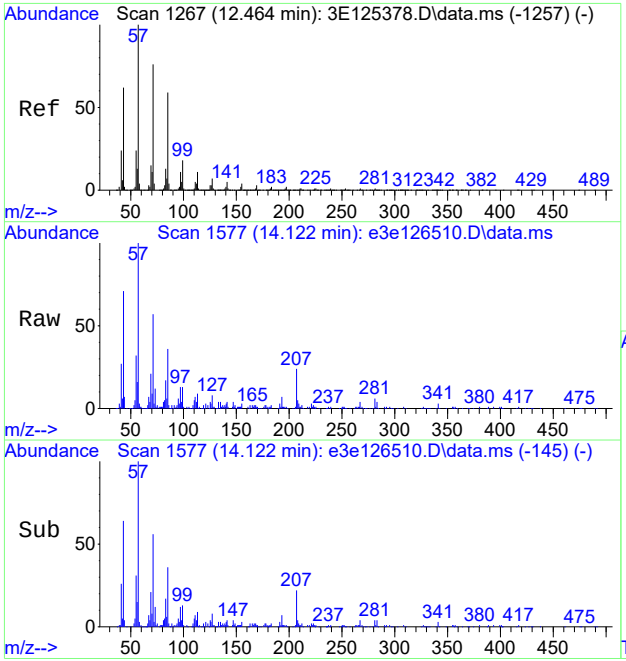


#26
o-Terphenyl
Concen: 30447261.00 m
RT: 10.116 min Scan# 828
Delta R.T. -0.005 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion:230 Resp:30447261

Ion	Ratio	Lower	Upper
230	100		
229	0.0	43.0	83.0#
228	0.0	27.3	67.3#
215	0.0	30.0	70.0#

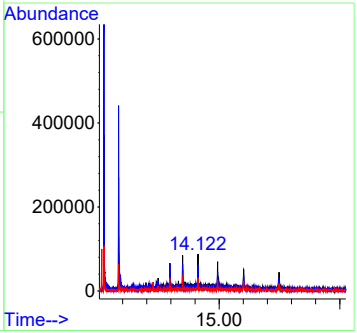


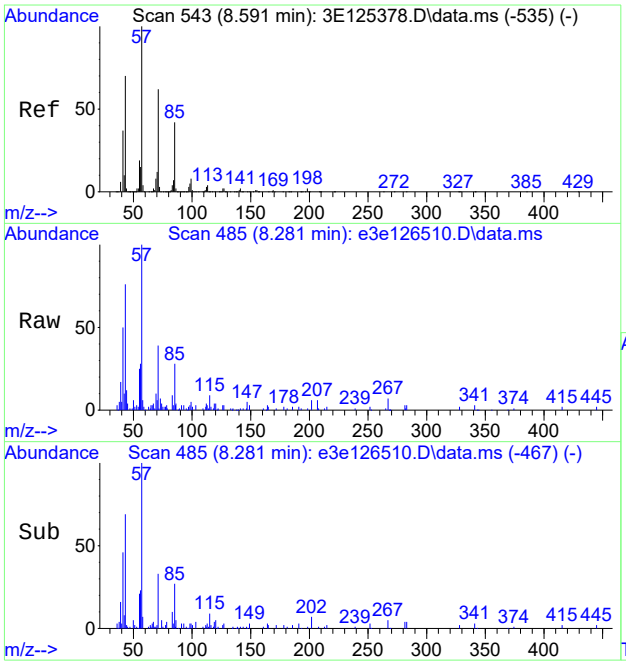


#29
n-Alkane
Concen: 2629942.00 m
RT: 14.122 min Scan# 1577
Delta R.T. 7.558 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 2629942

Ion	Ratio	Lower	Upper
57	100		
43	0.2	0.0	20.0
71	0.0	162.1	202.1#
85	0.0	0.0	20.0

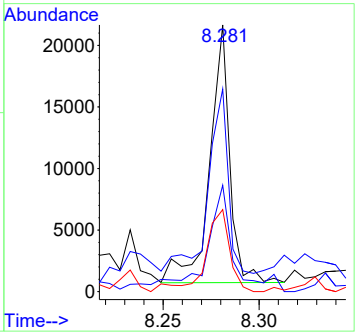


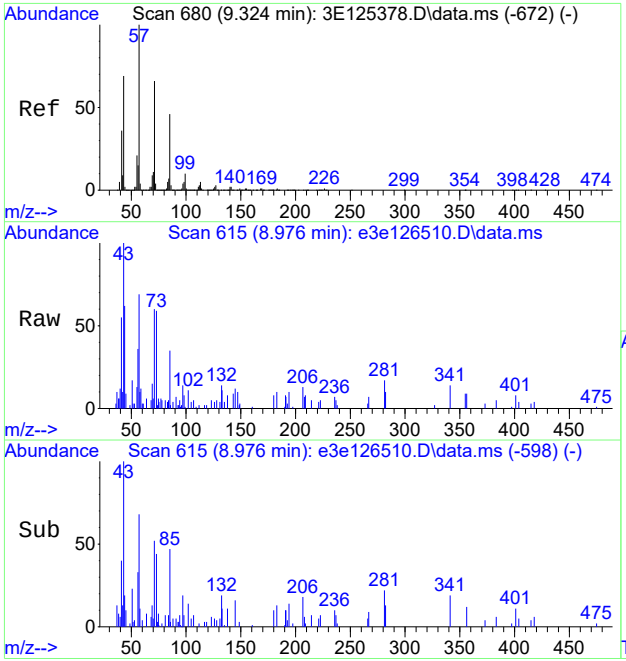


#34
n-Tetradecane (C14)
Concen: 15323.00
RT: 8.281 min Scan# 485
Delta R.T. -0.005 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 15323

Ion	Ratio	Lower	Upper
57	100		
43	82.9	57.6	86.4
71	58.2	48.6	73.0
85	38.4	32.5	48.7

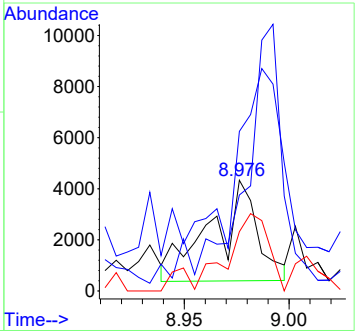


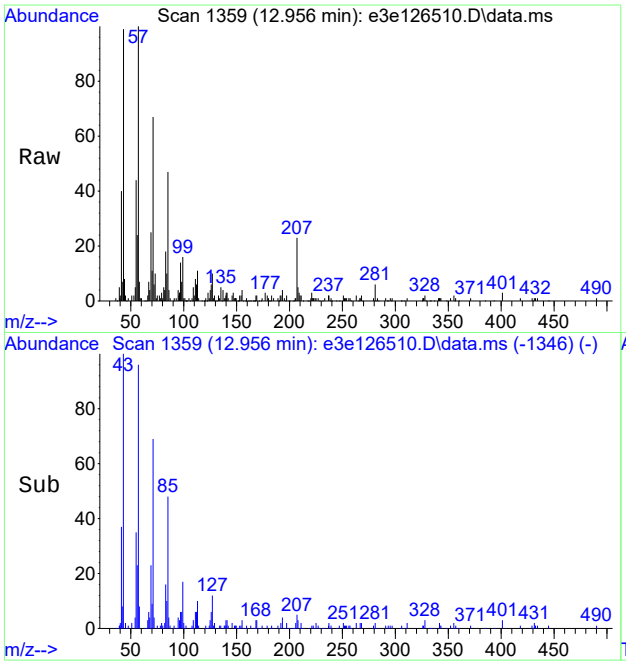


#35
n-Hexadecane (C16)
Concen: 6118.00
RT: 8.976 min Scan# 615
Delta R.T. -0.011 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 6118

Ion	Ratio	Lower	Upper
57	100		
43	259.7	54.8	82.2#
71	224.4	52.3	78.5#
85	65.4	36.8	55.2#

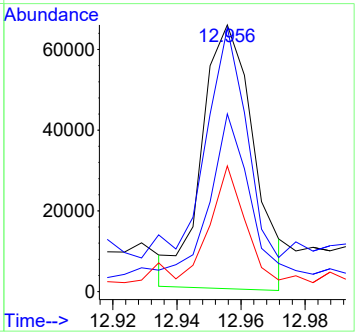


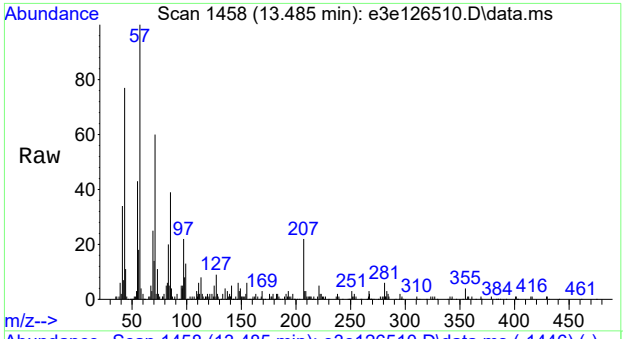


#47
n-Triacontane (C30)
Concen: 73944.00 m
RT: 12.956 min Scan# 1359
Delta R.T. -0.032 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 73944

Ion	Ratio	Lower	Upper
57	100		
43	0.0	47.7	71.5#
71	2.1	58.2	87.4#
85	1.6	45.5	68.3#

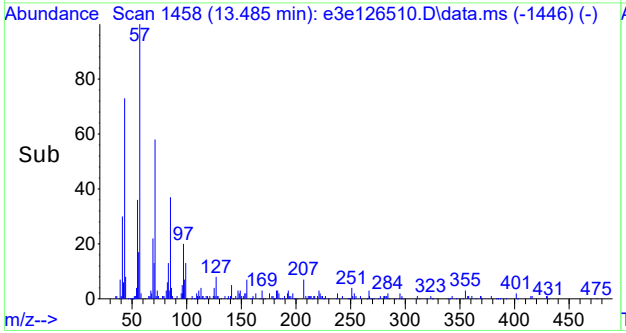


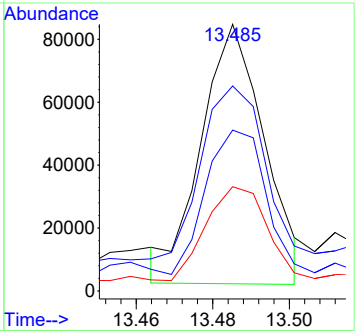


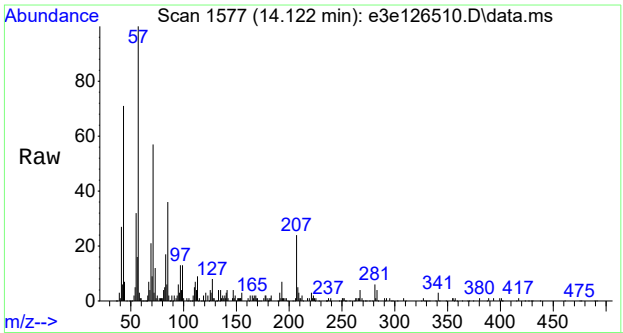
#48
n-Doatriacontane (C32)
Concen: 94784.00 m
RT: 13.485 min Scan# 1458
Delta R.T. -0.037 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 94784

Ion	Ratio	Lower	Upper
57	100		
43	0.0	46.9	70.3#
71	2.0	57.4	86.0#
85	6.8	44.5	66.7#



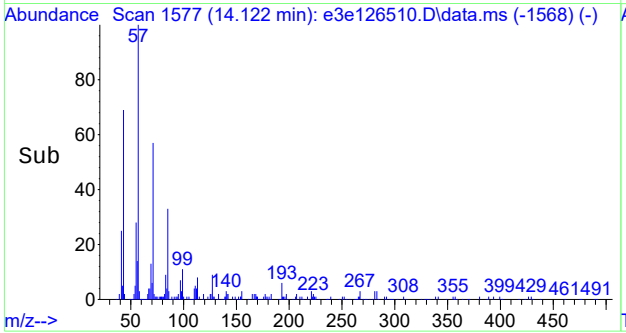


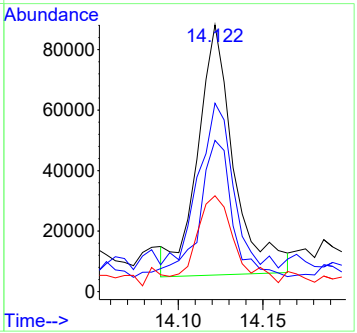


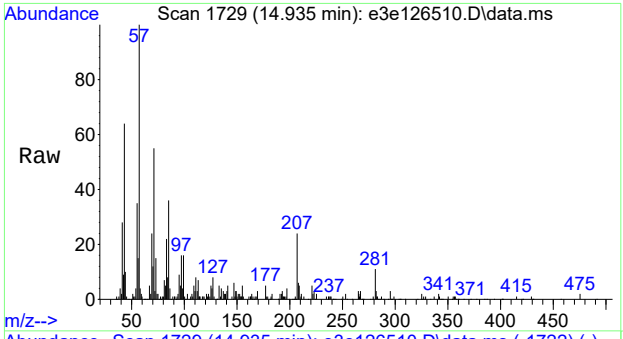
#49
n-Tetratriacontane (C34)
Concen: 122586.00 m
RT: 14.122 min Scan# 1577
Delta R.T. -0.053 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 122586

Ion	Ratio	Lower	Upper
57	100		
43	3.0	45.9	68.9#
71	3.3	56.8	85.2#
85	2.1	43.7	65.5#



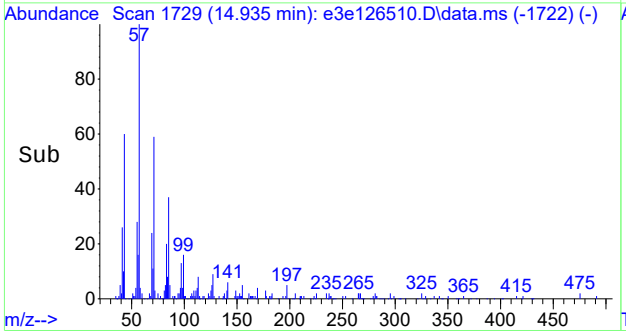


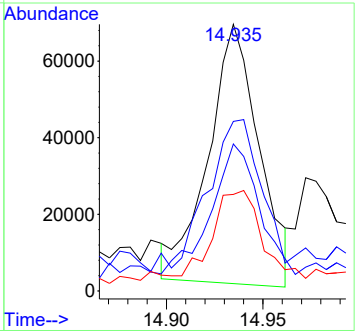


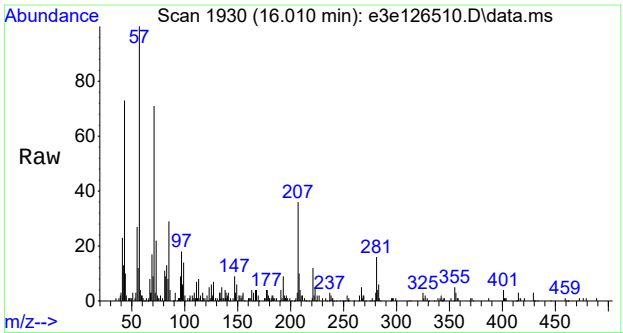
#50
n-Hexatriacontane (C36)
Concen: 123852.00 m
RT: 14.935 min Scan# 1729
Delta R.T. -0.064 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 123852

Ion	Ratio	Lower	Upper
57	100		
43	0.9	45.0	67.6#
71	0.0	56.8	85.2#
85	1.3	43.5	65.3#



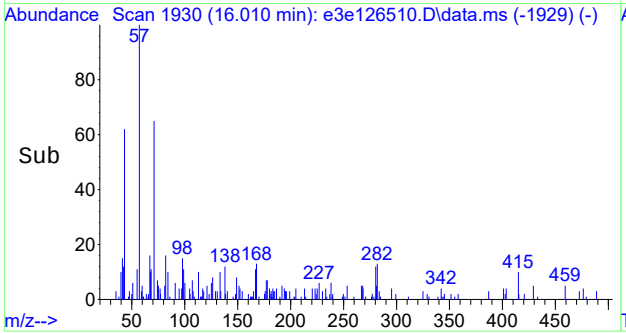


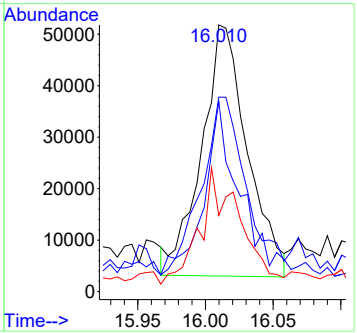


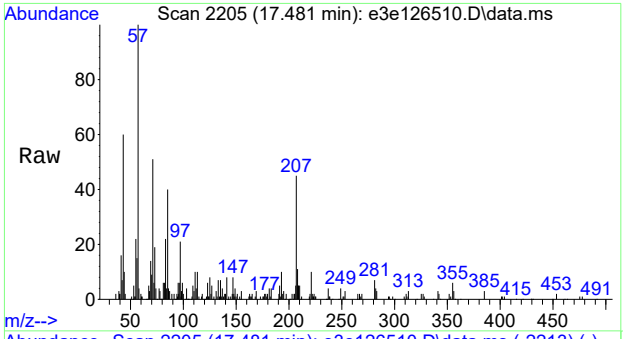
#51
n-Octatriacontane (C38)
Concen: 114860.00 m
RT: 16.010 min Scan# 1930
Delta R.T. -0.096 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 114860

Ion	Ratio	Lower	Upper
57	100		
43	2.8	44.0	66.0#
71	0.0	56.6	85.0#
85	1.9	43.1	64.7#



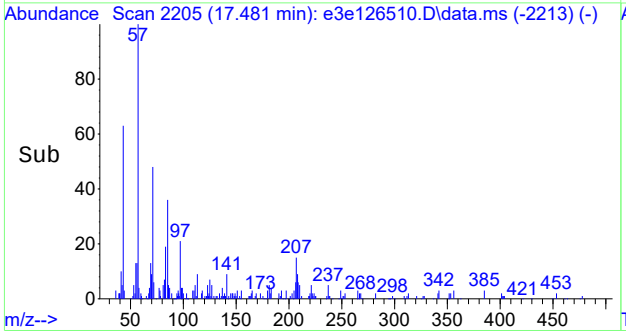


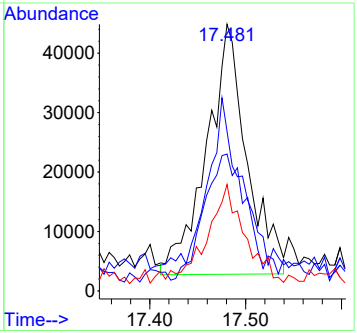


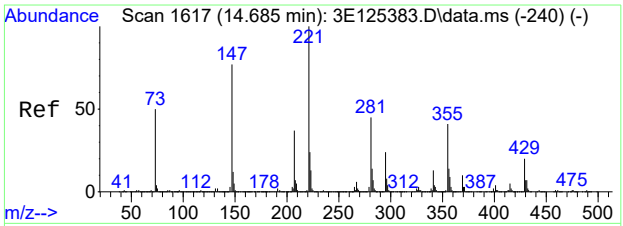
#52
n-Tetracontane (C40)
Concen: 122515.00 m
RT: 17.481 min Scan# 2205
Delta R.T. -0.144 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion: 57 Resp: 122515

Ion	Ratio	Lower	Upper
57	100		
43	3.1	42.4	63.6#
71	0.9	56.5	84.7#
85	1.1	43.1	64.7#



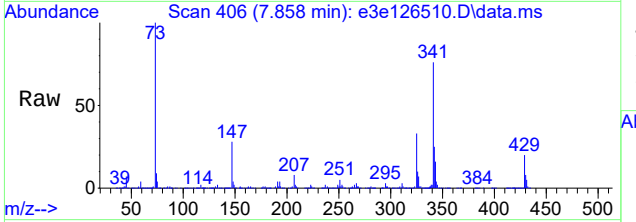


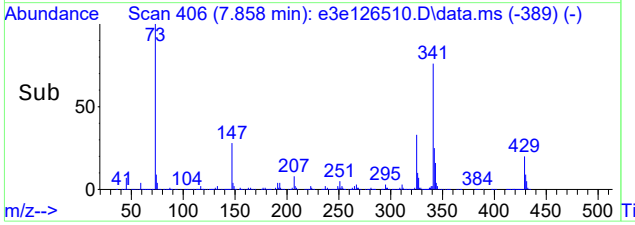


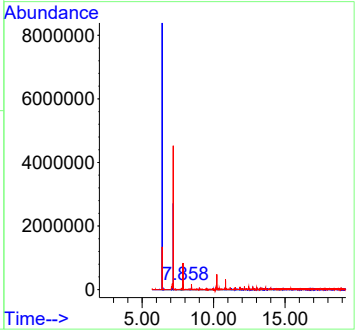
#53
Siloxane
Concen: 365145.00 m
RT: 7.858 min Scan# 406
Delta R.T. -0.011 min
Lab File: e3e126510.D
Acq: 9 Jan 2025 4:17 pm

Tgt Ion:429 Resp: 365145

Ion	Ratio	Lower	Upper
429	100		
355	0.0	0.0	20.0
281	1.6	0.0	20.0
73	180.4	0.0	20.0#







LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126510.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.575	161	166	169	rBV4	57203	60990	0.01%	0.013%
2	6.607	169	172	175	rVV5	18744	9894	0.00%	0.002%
3	6.682	183	186	188	rBV4	27598	21924	0.01%	0.005%
4	6.703	188	190	197	rVB7	18135	32731	0.01%	0.007%
5	6.762	197	201	207	rVB	62489	67631	0.02%	0.014%
6	6.821	207	212	218	rVB10	20346	29248	0.01%	0.006%
7	6.885	218	224	229	rBV10	15533	30046	0.01%	0.006%
8	6.944	232	235	237	rBV4	10838	10397	0.00%	0.002%
9	6.976	237	241	243	rBV5	12900	12271	0.00%	0.003%
10	7.067	246	258	260	rBV3	418077	929157	0.22%	0.198%
11	7.115	263	267	269	rVV2	773416	1159416	0.28%	0.247%
12	7.179	269	279	285	rVV	20968367	16636965	3.95%	3.541%
13	7.227	285	288	295	rVV8	19092	21181	0.01%	0.005%
14	7.350	307	311	315	rBV	59347	60608	0.01%	0.013%
15	7.420	315	324	327	rBV3	40431	60493	0.01%	0.013%
16	7.511	335	341	344	rBV5	28729	32565	0.01%	0.007%
17	7.538	344	346	348	rVV2	16614	10527	0.00%	0.002%
18	7.570	349	352	359	rVB9	26288	39113	0.01%	0.008%
19	7.655	364	368	369	rBV4	10292	12145	0.00%	0.003%
20	7.768	369	389	393	rBV10	99037	427012	0.10%	0.091%
21	7.816	393	398	400	rVV6	130207	254913	0.06%	0.054%
22	7.858	400	406	413	rVV	3962600	2873652	0.68%	0.612%
23	7.912	413	416	420	rVB4	64538	53413	0.01%	0.011%
24	7.944	420	422	424	rBV3	13141	9994	0.00%	0.002%
25	7.971	425	427	431	rVB5	21242	17074	0.00%	0.004%
26	8.030	435	438	442	rVB6	13975	14806	0.00%	0.003%
27	8.083	444	448	455	rVB10	15165	34480	0.01%	0.007%
28	8.147	455	460	463	rBV7	12731	21444	0.01%	0.005%
29	8.206	463	471	473	rBV9	35494	40773	0.01%	0.009%
30	8.233	473	476	478	rVB4	27342	18793	0.00%	0.004%
31	8.281	478	485	488	rVB	99187	90834	0.02%	0.019%
32	8.324	488	493	495	rBV6	20606	31910	0.01%	0.007%
33	8.399	500	507	513	rVV6	83223	186307	0.04%	0.040%
34	8.452	513	517	521	rVV	669700	516446	0.12%	0.110%
35	8.490	522	524	531	rVB8	17942	26294	0.01%	0.006%
36	8.532	531	532	537	rBV5	6664	9619	0.00%	0.002%
37	8.591	541	543	549	rVV7	36650	47203	0.01%	0.010%
38	8.650	549	554	559	rVB3	123492	124579	0.03%	0.027%
39	8.752	570	573	577	rVB6	15664	20003	0.00%	0.004%
40	8.800	577	582	586	rBV8	19043	35534	0.01%	0.008%

AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:46 2025 1

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	8.885	590	598	599	rBV8	13418	22905	0.01%	0.005%
42	8.944	604	609	611	rVV6	26967	35662	0.01%	0.008%
43	9.008	614	621	625	rVB2	283468	265844	0.06%	0.057%
44	9.105	636	639	640	rBV3	9952	10538	0.00%	0.002%
45	9.131	640	644	646	rVV5	18729	18782	0.00%	0.004%
46	9.180	649	653	655	rBV5	16413	19846	0.00%	0.004%
47	9.201	655	657	659	rVV3	15426	15471	0.00%	0.003%
48	9.222	659	661	665	rVV4	46635	34675	0.01%	0.007%
49	9.260	665	668	670	rVB4	10269	9128	0.00%	0.002%
50	9.297	670	675	677	rBV5	21107	25218	0.01%	0.005%
51	9.340	677	683	692	rVB5	76647	116967	0.03%	0.025%
52	9.399	692	694	698	rBV4	10716	9934	0.00%	0.002%
53	9.447	698	703	706	rBV7	41117	49265	0.01%	0.010%
54	9.511	710	715	719	rBV2	225239	182738	0.04%	0.039%
55	9.581	723	728	729	rBV5	21619	24511	0.01%	0.005%
56	9.645	736	740	748	rVB9	29384	48571	0.01%	0.010%
57	9.720	748	754	755	rBV6	14154	20352	0.00%	0.004%
58	9.741	755	758	760	rVB4	16008	16317	0.00%	0.003%
59	9.763	760	762	767	rVB5	29130	26576	0.01%	0.006%
60	9.805	767	770	775	rVB7	16011	20883	0.00%	0.004%
61	9.859	775	780	781	rBV4	10218	10612	0.00%	0.002%
62	10.142	781	833	844	rBV4	244887575	420682602	100.00%	89.540%
63	10.228	844	849	877	rVV	6283664	7979549	1.90%	1.698%
64	10.404	879	882	891	rVB2	245163	279524	0.07%	0.059%
65	10.800	950	956	959	rBV2	256560	274224	0.07%	0.058%
66	10.832	959	962	974	rVV	4035233	4708408	1.12%	1.002%
67	10.913	974	977	983	rVB	296580	321447	0.08%	0.068%
68	11.164	1020	1024	1030	rVB	287031	257365	0.06%	0.055%
69	11.437	1068	1075	1081	rBV3	239545	296936	0.07%	0.063%
70	11.512	1082	1089	1095	rVB2	334421	325539	0.08%	0.069%
71	11.592	1102	1104	1106	rBV3	26346	17572	0.00%	0.004%
72	11.619	1106	1109	1111	rBV3	25155	28001	0.01%	0.006%
73	11.704	1118	1125	1131	rBV10	74877	156296	0.04%	0.033%
74	11.752	1132	1134	1138	rVB5	50773	57169	0.01%	0.012%
75	11.843	1148	1151	1158	rVB	416760	394735	0.09%	0.084%
76	11.966	1171	1174	1178	rBV5	71423	77916	0.02%	0.017%
77	12.084	1194	1196	1201	rVB3	75457	87015	0.02%	0.019%
78	12.159	1206	1210	1218	rVV2	560837	522750	0.12%	0.111%
79	12.223	1219	1222	1226	rVV6	40833	52738	0.01%	0.011%
80	12.260	1227	1229	1232	rVB3	69308	56036	0.01%	0.012%
81	12.287	1233	1234	1238	rBV4	25878	32732	0.01%	0.007%
82	12.399	1250	1255	1260	rVB2	240417	219197	0.05%	0.047%
83	12.458	1261	1266	1274	rBV2	586084	634528	0.15%	0.135%
84	12.522	1275	1278	1280	rBV4	78782	68148	0.02%	0.015%
85	12.555	1280	1284	1287	rVV	216164	172700	0.04%	0.037%

AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:46 2025 (b) (4) 2

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	12.747	1315	1320	1325	rBV	574434	598630	0.14%	0.127%
87	12.827	1333	1335	1338	rBV4	49747	39496	0.01%	0.008%
88	12.956	1355	1359	1363	rBV	371644	315124	0.07%	0.067%
89	13.020	1367	1371	1379	rVB2	551067	584513	0.14%	0.124%
90	13.314	1421	1426	1434	rVB2	502511	588929	0.14%	0.125%
91	13.485	1455	1458	1462	rVB	425634	427997	0.10%	0.091%
92	13.630	1481	1485	1496	rVB3	411853	583050	0.14%	0.124%
93	13.988	1547	1552	1557	rBV4	341937	519402	0.12%	0.111%
94	14.122	1573	1577	1588	rVB	391266	537155	0.13%	0.114%
95	14.389	1622	1627	1639	rVB5	274984	482445	0.11%	0.103%
96	14.854	1710	1714	1722	rVB5	205626	395495	0.09%	0.084%
97	14.935	1724	1729	1735	rBV2	287328	482941	0.11%	0.103%
98	15.405	1813	1817	1829	rVB10	173654	403809	0.10%	0.086%
99	16.010	1924	1930	1936	rBV6	232165	537088	0.13%	0.114%
100	17.481	2198	2205	2213	rVB5	203185	552539	0.13%	0.118%

Sum of corrected areas: 469828920

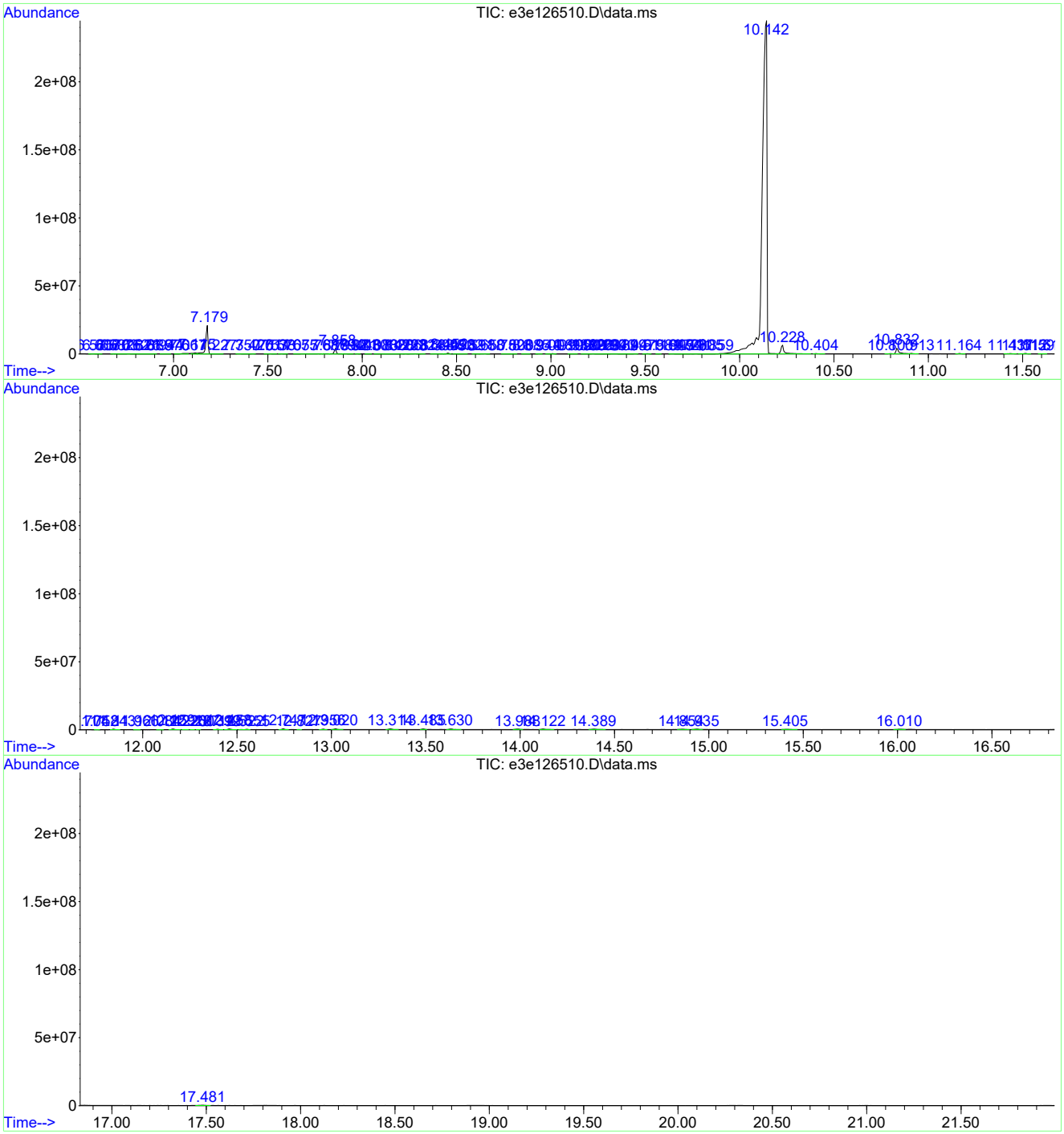
(b) (4)

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:48 2025 4

(b) (4)

Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

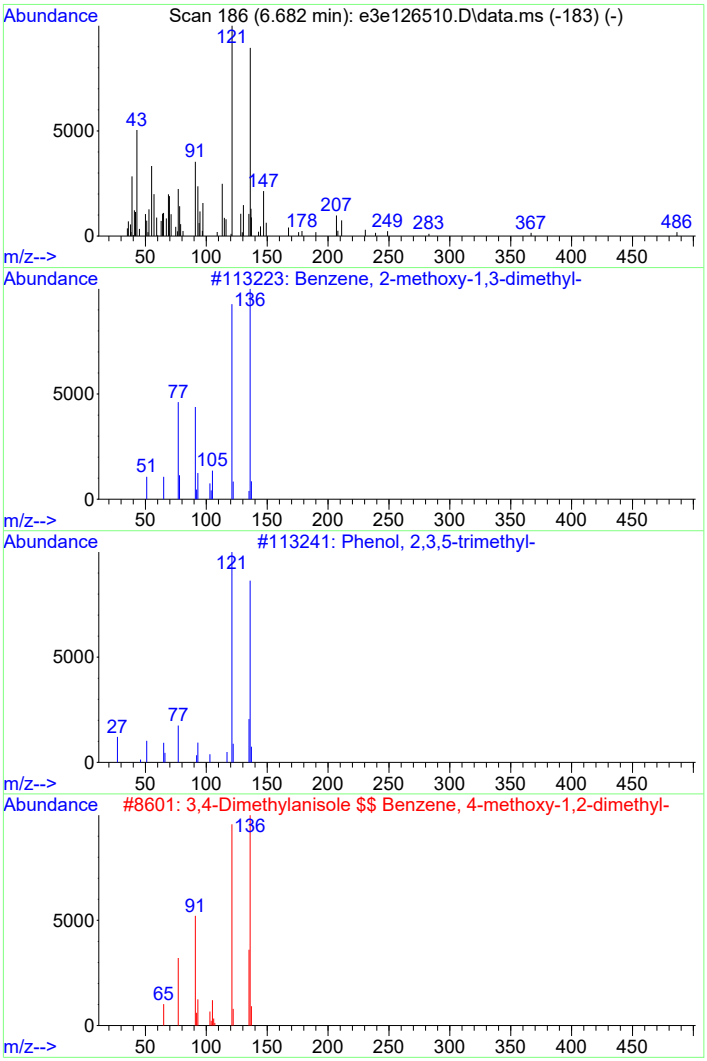
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

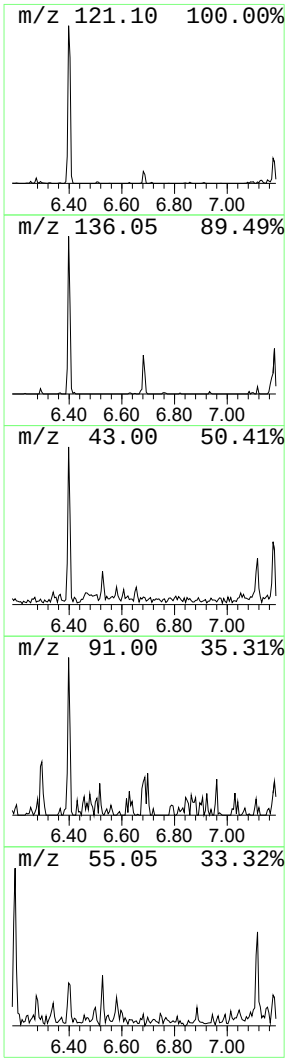
****

Peak Number 3 Benzene, 2-methoxy-1,3-dime... Concentration Rank 60

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.682	0.00	21924	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 2-methoxy-1,3-dimethyl-	136	C9H12O	001004-66-6	52
2	Phenol, 2,3,5-trimethyl-	136	C9H12O	000697-82-5	50
3	3,4-Dimethylanisole $$ Benzene, ...	136	C9H12O	004685-47-6	50
4	Phenol, 2,4,6-trimethyl-	136	C9H12O	000527-60-6	50
5	Phenol, 3-(1-methylethyl)-, acetate	178	C11H14O2	036438-57-0	50





AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:49 2025 5

Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

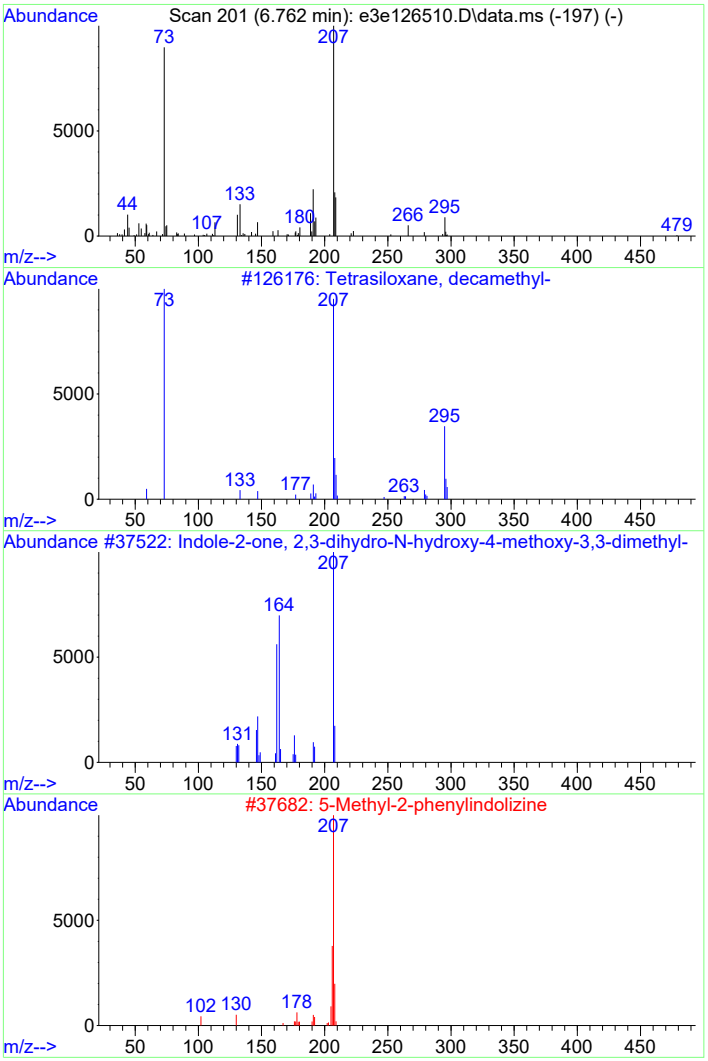
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

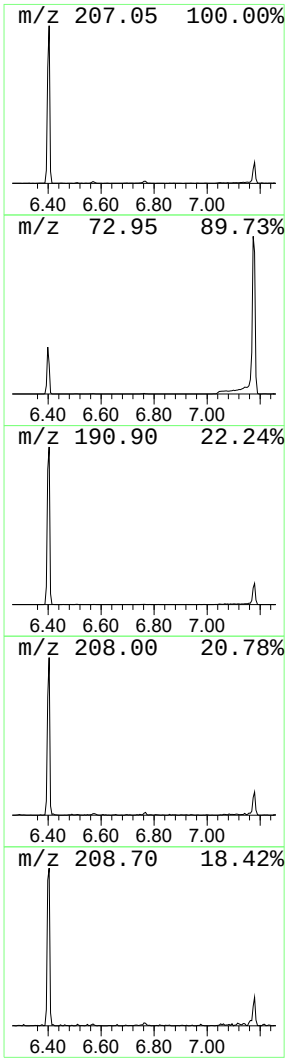
****

Peak Number 5 Siloxane Concentration Rank 32

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.762	0.00	67631	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetrasiloxane, decamethyl-	310	C10H30O3Si4	000141-62-8	50
2	Indole-2-one, 2,3-dihydro-N-hydr...	207	C11H13NO3	000000-00-0	47
3	5-Methyl-2-phenylindolizine	207	C15H13N	036944-99-7	47
4	Tetrasiloxane, decamethyl- $$ De...	310	C10H30O3Si4	000141-62-8	45
5	Cyclotrisiloxane, hexamethyl- $$...	222	C6H18O3Si3	000541-05-9	38





AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:51 2025 6

Library Search Compound Report

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Acq On    :  9 Jan 2025    4:17 pm
Operator  : (b) (6)
Sample    : da69665-1ta
Misc      : op60797,e3e5888,1,,,1,1
ALS Vial  : 8   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

**********************************************************************
Peak Number 10  Siloxane                          Concentration Rank  3
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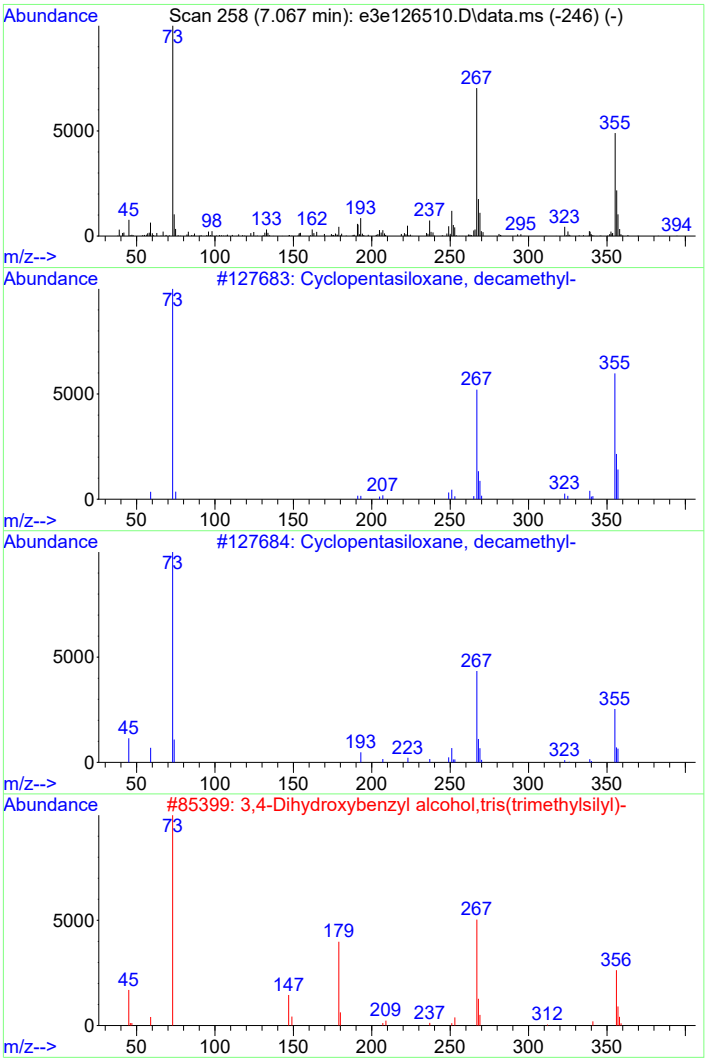
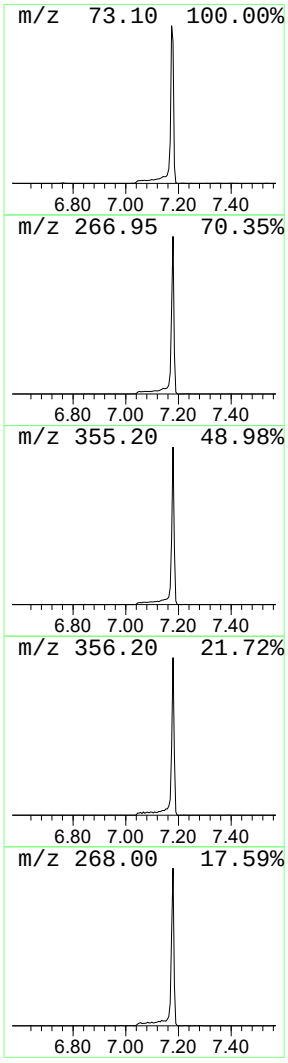
R.T.	EstConc	Area	Relative to ISTD	R.T.
7.067	0.00	929157	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	91
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	87
3	3,4-Dihydroxybenzyl alcohol,tris...	356	C16H32O3Si3	068595-79-9	47
4	Butanamide, 2,2,3,3,4,4,4-heptaf...	493	C18H26F7NO3Si2	055471-01-7	35
5	Benzenemethanol, .alpha.-(aminom...	369	C17H35NO2Si3	056145-08-5	32





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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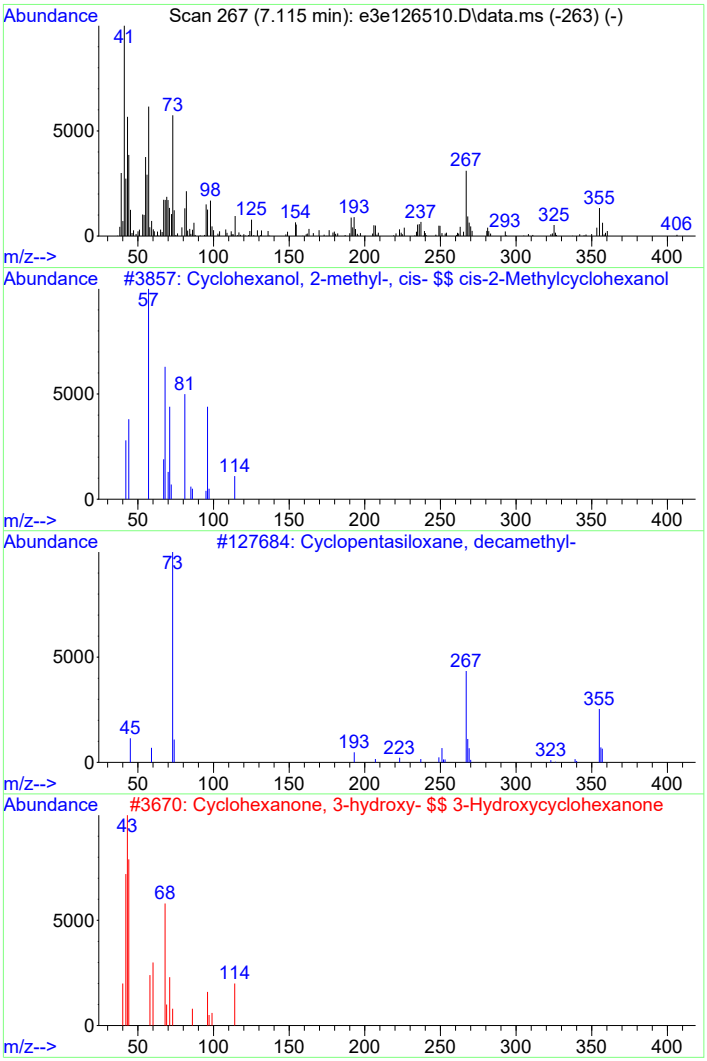
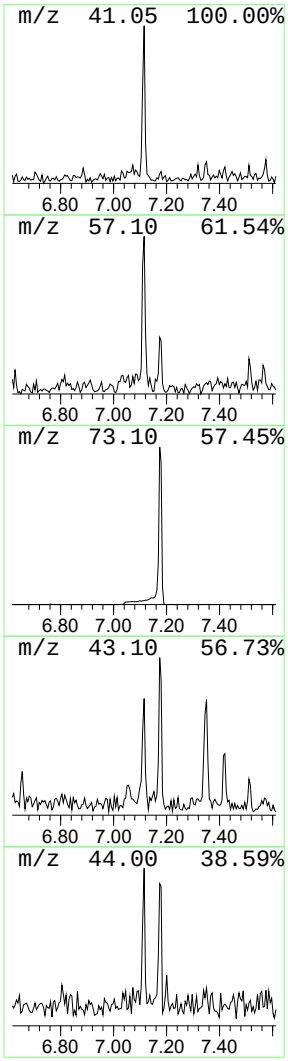
Peak Number 11 Siloxane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.115	0.00	1159420	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexanol, 2-methyl-, cis- $$...	114	C7H14O	007443-70-1	27
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	27
3	Cyclohexanone, 3-hydroxy- $$ 3-H...	114	C6H10O2	000823-19-8	27
4	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	25
5	Cyclohexanol, 2-methyl- $$ 1-Met...	114	C7H14O	000583-59-5	16





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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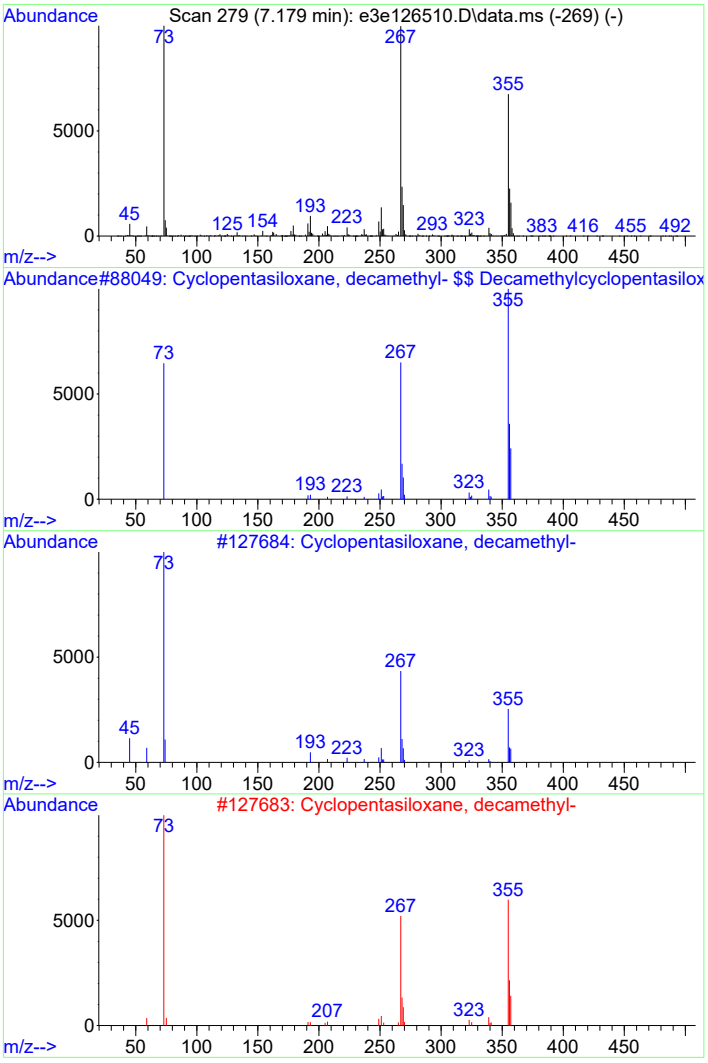
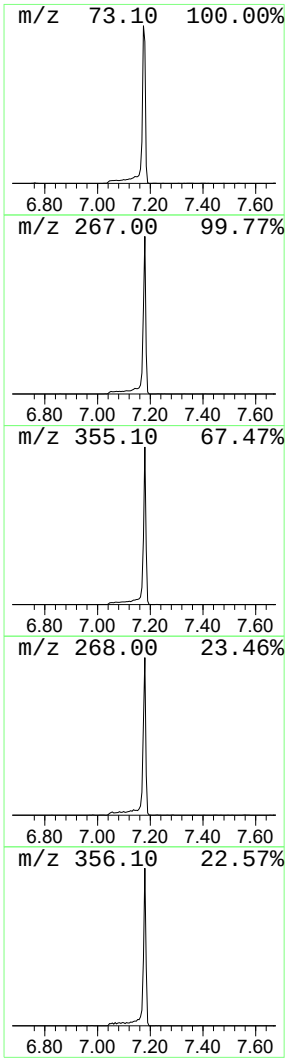
Peak Number 12 Siloxane Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.179	0.00	16637000	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl- ...	370	C10H30O5Si5	000541-02-6	91
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	87
3	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	62
4	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	49
5	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	47





AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:56 2025 9

Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

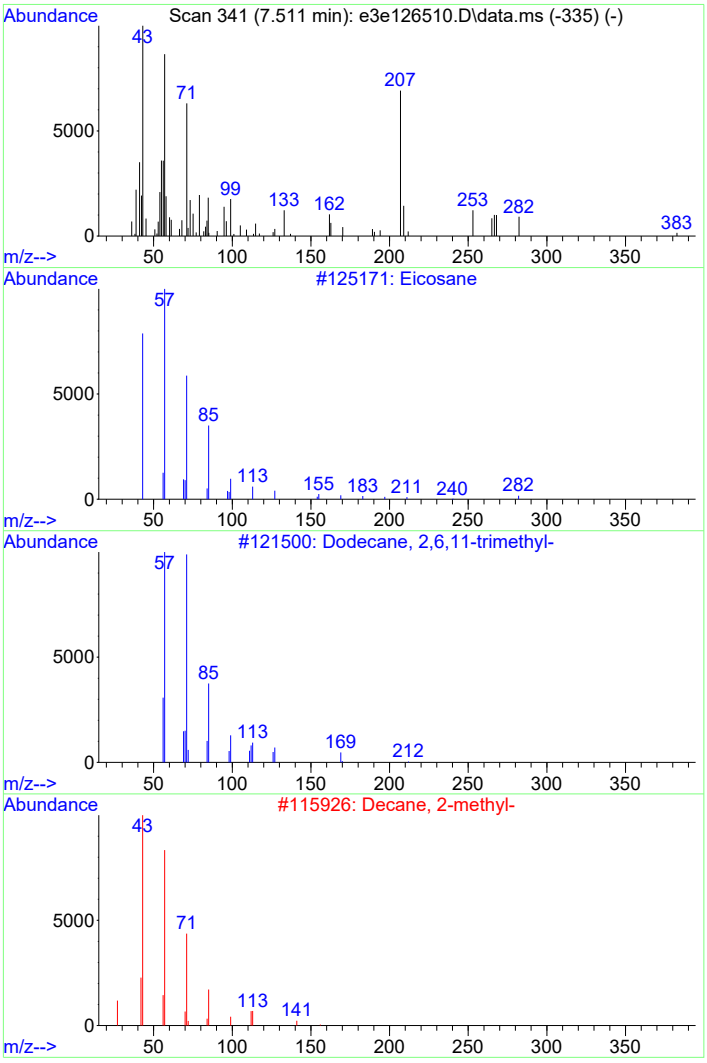
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

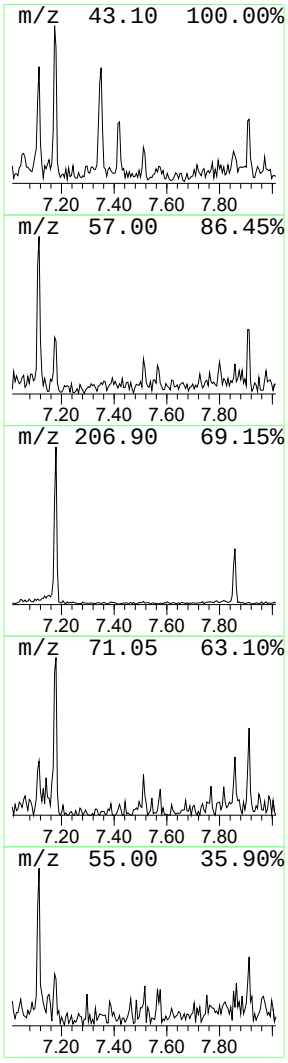
****

Peak Number 16 Alkane Concentration Rank 51

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.511	0.00	32565	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane	282	C20H42	000112-95-8	27
2	Dodecane, 2,6,11-trimethyl-	212	C15H32	031295-56-4	22
3	Decane, 2-methyl-	156	C11H24	006975-98-0	22
4	Dodecane, 4,6-dimethyl-	198	C14H30	061141-72-8	22
5	Dodecane, 2,6,11-trimethyl-	212	C15H32	031295-56-4	22





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

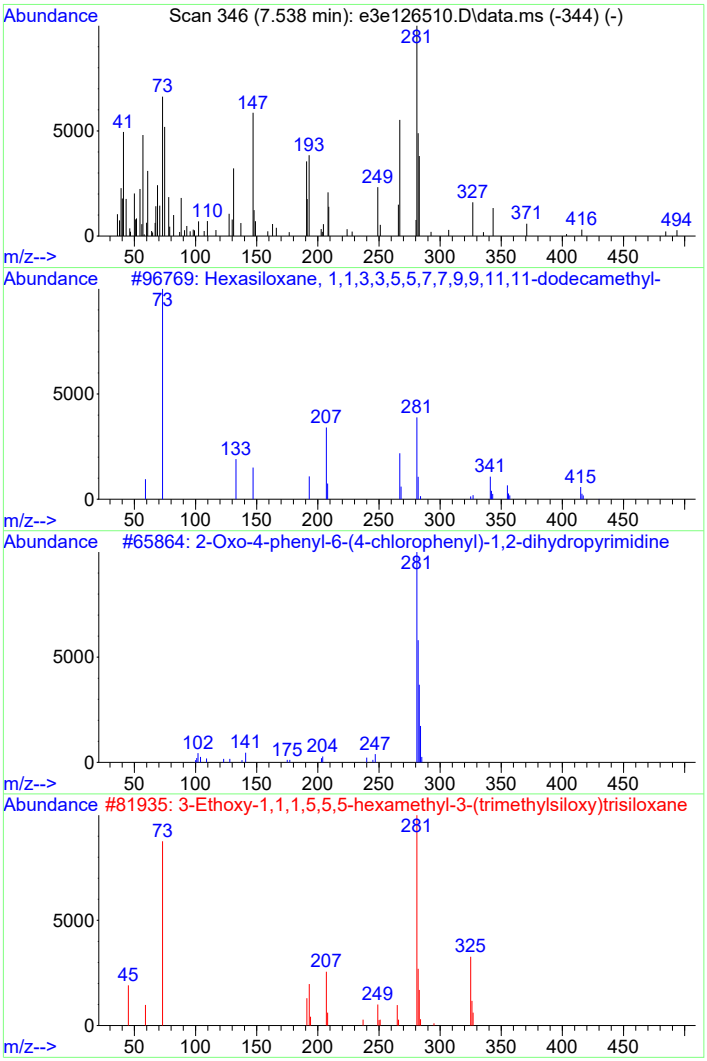
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

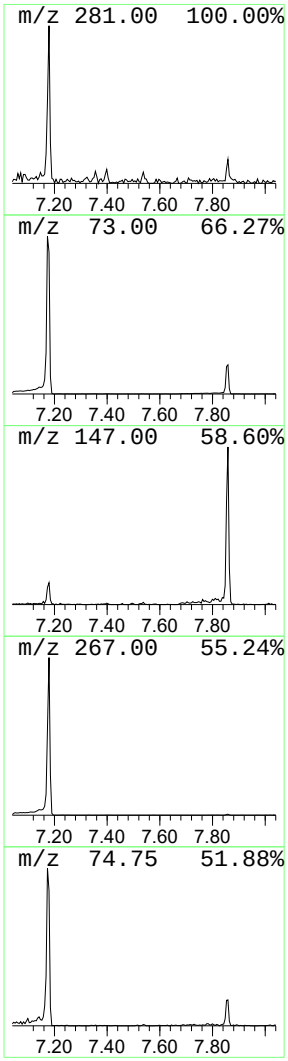
****

Peak Number 17 Siloxane Concentration Rank 77

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.538	0.00	10527	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	33
2	2-Oxo-4-phenyl-6-(4-chlorophenyl...	282	C16H11ClN2O	024030-13-5	27
3	3-Ethoxy-1,1,1,5,5,5-hexamethyl-...	340	C11H32O4Si4	018030-67-6	25
4	1-Propanone, 1,3-diphenyl-3-(tri...	282	C18H22OSi	030262-98-7	23
5	8-Chloro-5H-indeno[1,2-b]quinoli...	281	C16H8ClNO2	000000-00-0	12





AECOM_e3g_TPHEXT.M Fri Jan 10 11:27:59 2025 11

Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

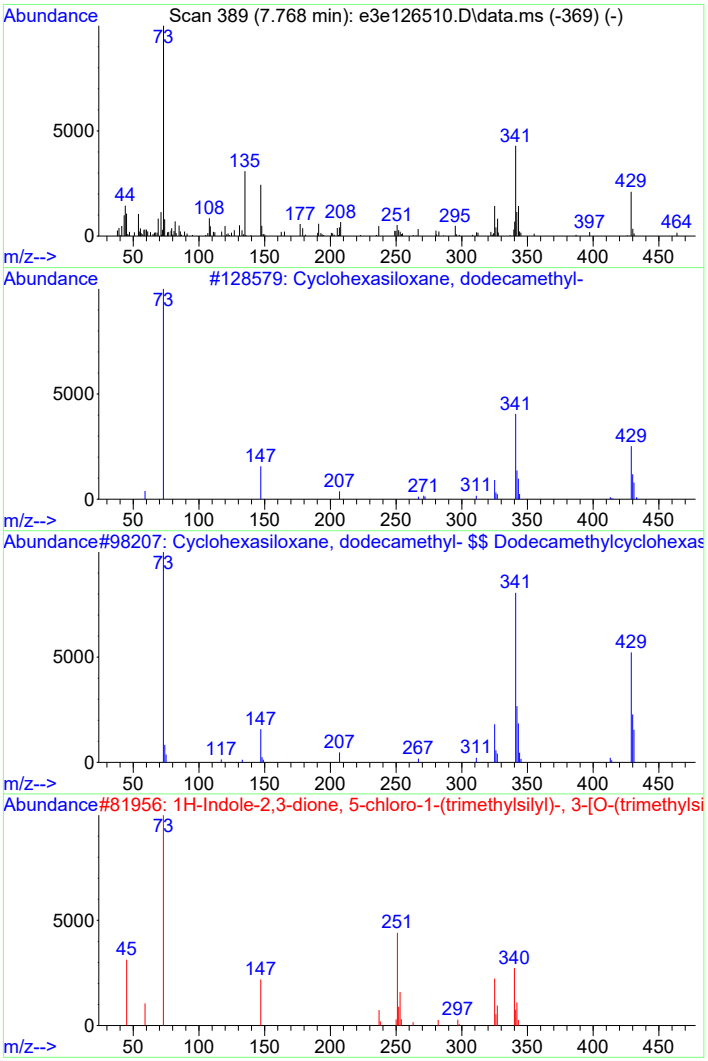
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

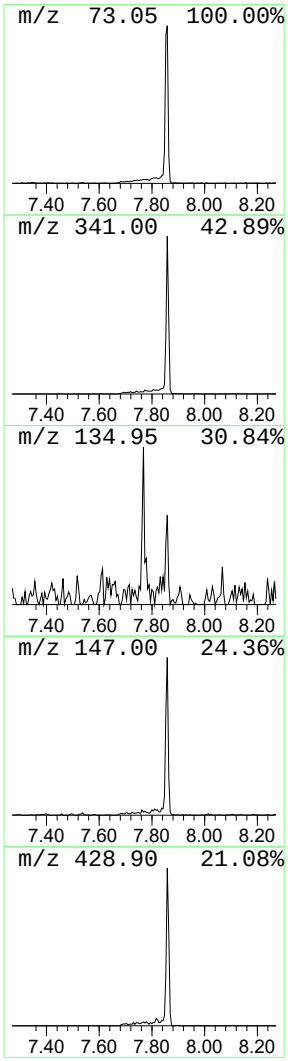
****

Peak Number 20 Siloxane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.768	0.00	427012	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexasiloxane, dodecamethyl-	444	C12H36O6Si6	000540-97-6	64
2	Cyclohexasiloxane, dodecamethyl-...	444	C12H36O6Si6	000540-97-6	53
3	1H-Indole-2,3-dione, 5-chloro-1-...	340	C14H21ClN2O2Si2	000000-00-0	12
4	Norcodeine di-TMS derivative	429	C23H35NO3Si2	000000-00-0	9
5	Trimethylsilyl 3,5-dimethoxy-4-(...	342	C15H26O5Si2	010517-29-0	9





Library Search Compound Report

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Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

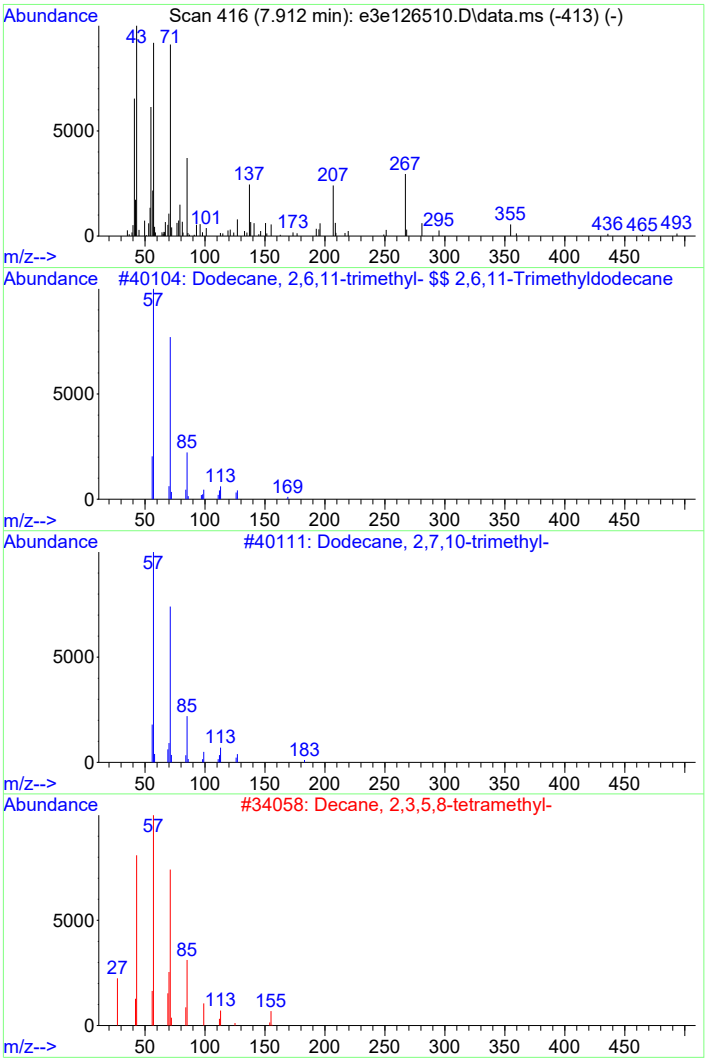
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

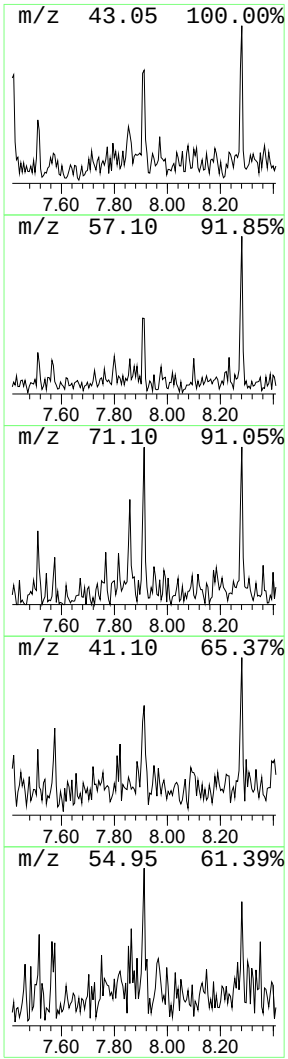
****

Peak Number 21 Alkane Concentration Rank 38

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.912	0.00	53413	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane, 2,6,11-trimethyl- $$ 2...	212	C15H32	031295-56-4	43
2	Dodecane, 2,7,10-trimethyl-	212	C15H32	074645-98-0	43
3	Decane, 2,3,5,8-tetramethyl-	198	C14H30	000000-00-0	43
4	3-Buten-2-ol, 2-methyl-	86	C5H10O	000115-18-4	38
5	Decane, 2,3,4-trimethyl-	184	C13H28	062238-15-7	37





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Library Search Compound Report

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Data File : e3e126510.D
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Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

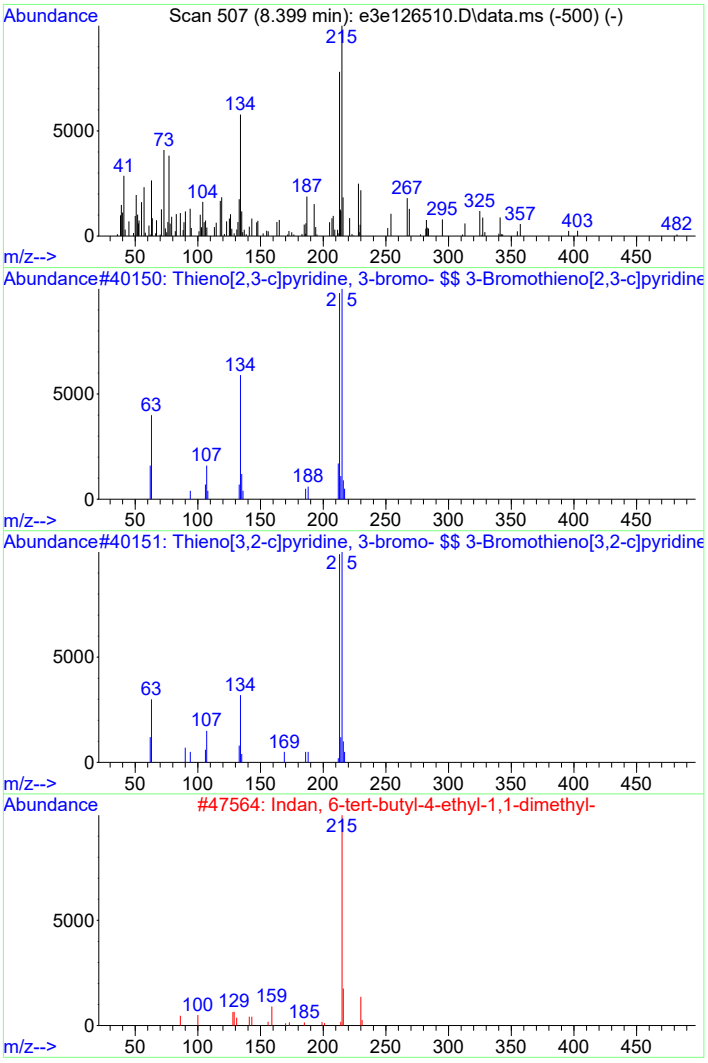
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

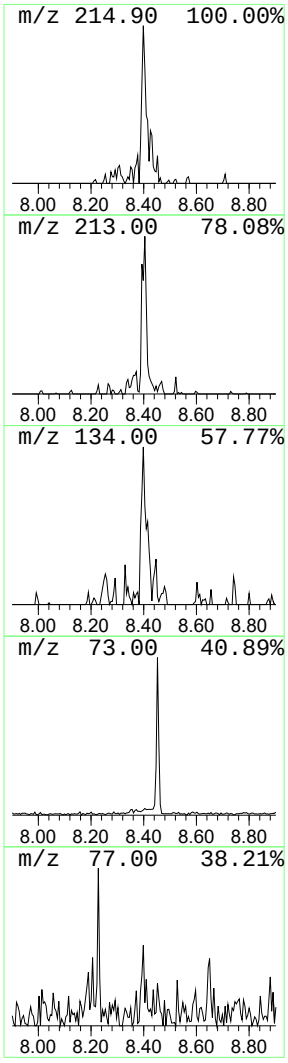
****

Peak Number 28 Thieno[2,3-c]pyridine, 3-br... Concentration Rank 23

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.399	0.00	186307	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Thieno[2,3-c]pyridine, 3-bromo- ...	213	C7H4BrNS	028783-17-7	50
2	Thieno[3,2-c]pyridine, 3-bromo- ...	213	C7H4BrNS	028783-18-8	47
3	Indan, 6-tert-butyl-4-ethyl-1,1-...	230	C17H26	003247-65-2	22
4	2-(p-Nitrobenzyl)pyridine $$ Pyr...	214	C12H10N2O2	000620-87-1	22
5	Phenol, 4,4'-(1-methylethylidene...	228	C15H16O2	000080-05-7	22





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:04 2025 14

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

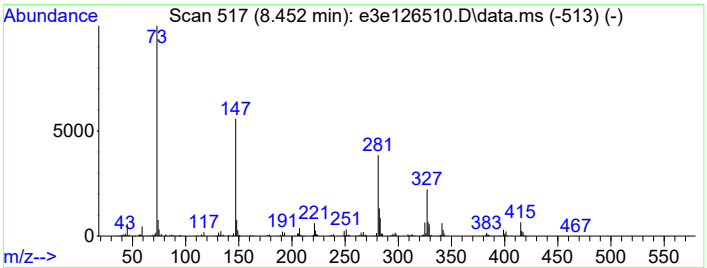
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

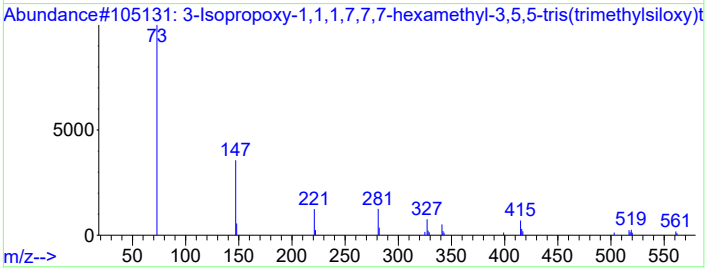
****

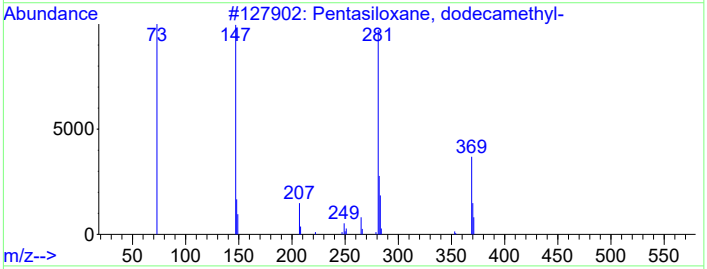
Peak Number 29 Siloxane Concentration Rank 11

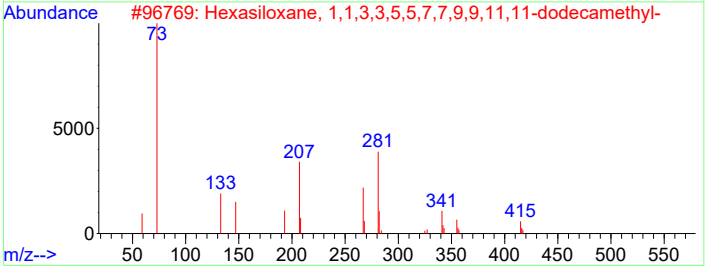
R.T.	EstConc	Area	Relative to ISTD	R.T.
8.452	0.00	516446	External Standard	0.000

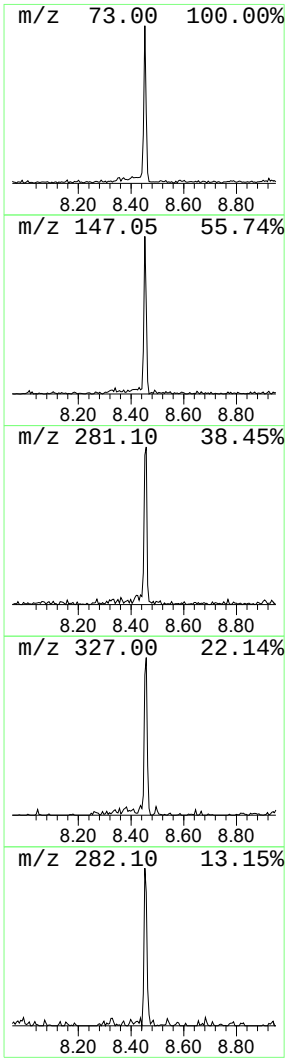
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	38
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	38
3	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	28
4	9,12,15-Octadecatrienoic acid, 2...	496	C27H52O4Si2	055521-22-7	18
5	4-Amino-5-imidazole carboxamide,...	342	C13H30N4OSi3	000000-00-0	10











AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:06 2025 15

Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

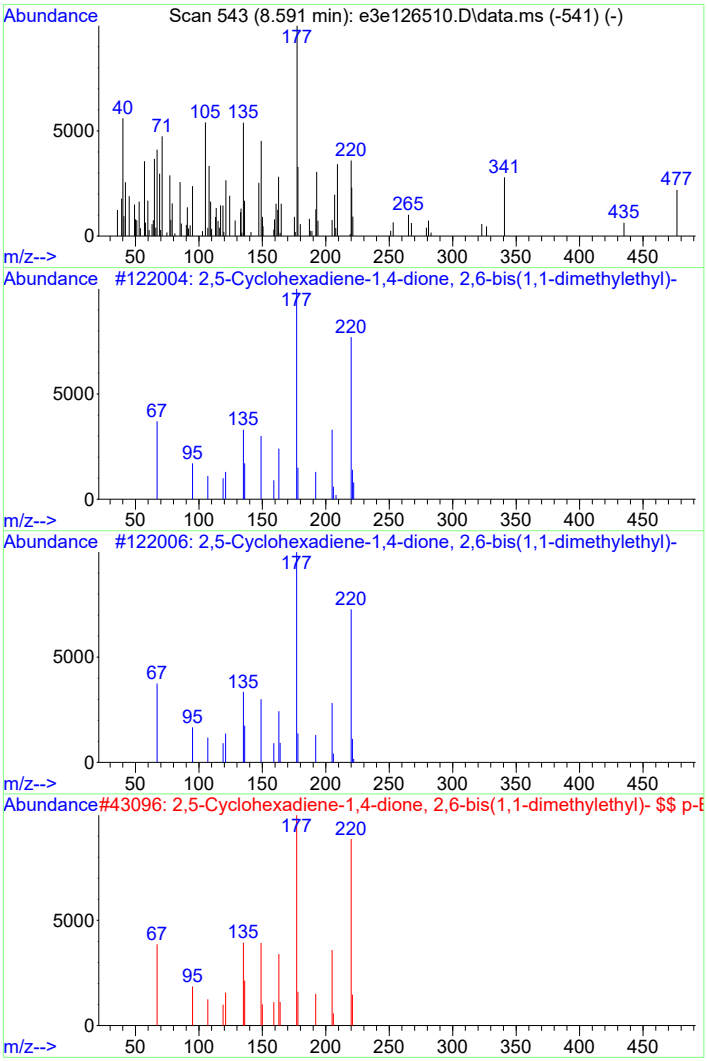
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

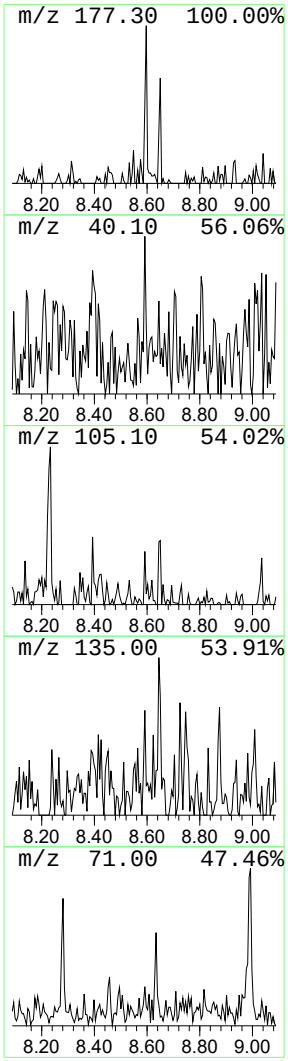
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 32 2,5-Cyclohexadiene-1,4-dion... Concentration Rank 42

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.591	0.00	47203	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,5-Cyclohexadiene-1,4-dione, 2,...	220	C14H20O2	000719-22-2	83
2	2,5-Cyclohexadiene-1,4-dione, 2,...	220	C14H20O2	000719-22-2	64
3	2,5-Cyclohexadiene-1,4-dione, 2,...	220	C14H20O2	000719-22-2	58
4	2,5-Cyclohexadiene-1,4-dione, 2,...	220	C14H20O2	000719-22-2	38
5	7.alpha.-Ethyl-2,6-dimethylbicyc...	192	C14H24	000000-00-0	35





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

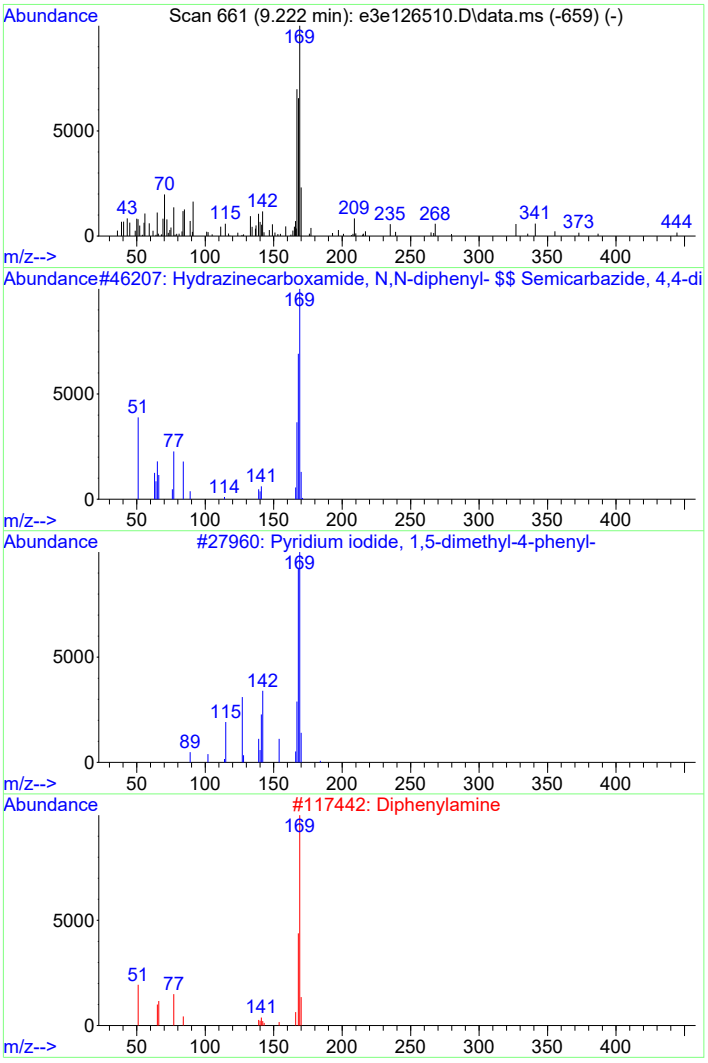
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

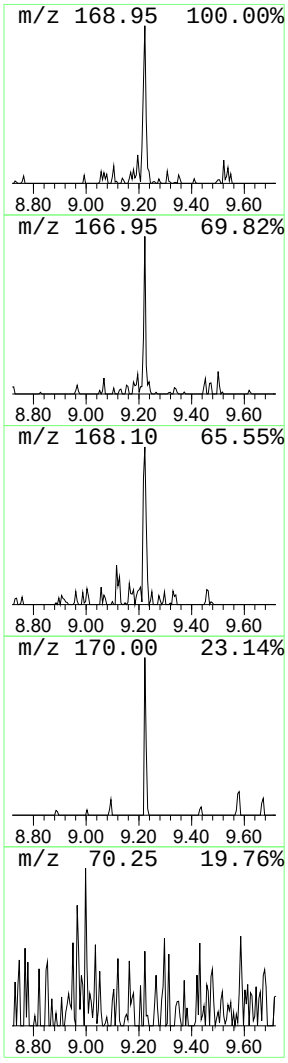
****

Peak Number 41 Diphenylamine Concentration Rank 47

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.222	0.00	34675	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hydrazinecarboxamide, N,N-diphen...	227	C13H13N3O	000603-51-0	53
2	Pyridium iodide, 1,5-dimethyl-4-...	184	C13H14N	000000-00-0	53
3	Diphenylamine	169	C12H11N	000122-39-4	50
4	Diphenylamine $$ Benzenamine, N-...	169	C12H11N	000122-39-4	50
5	Pyridine, 4-(phenylmethyl)-	169	C12H11N	002116-65-6	49





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:10 2025 17

Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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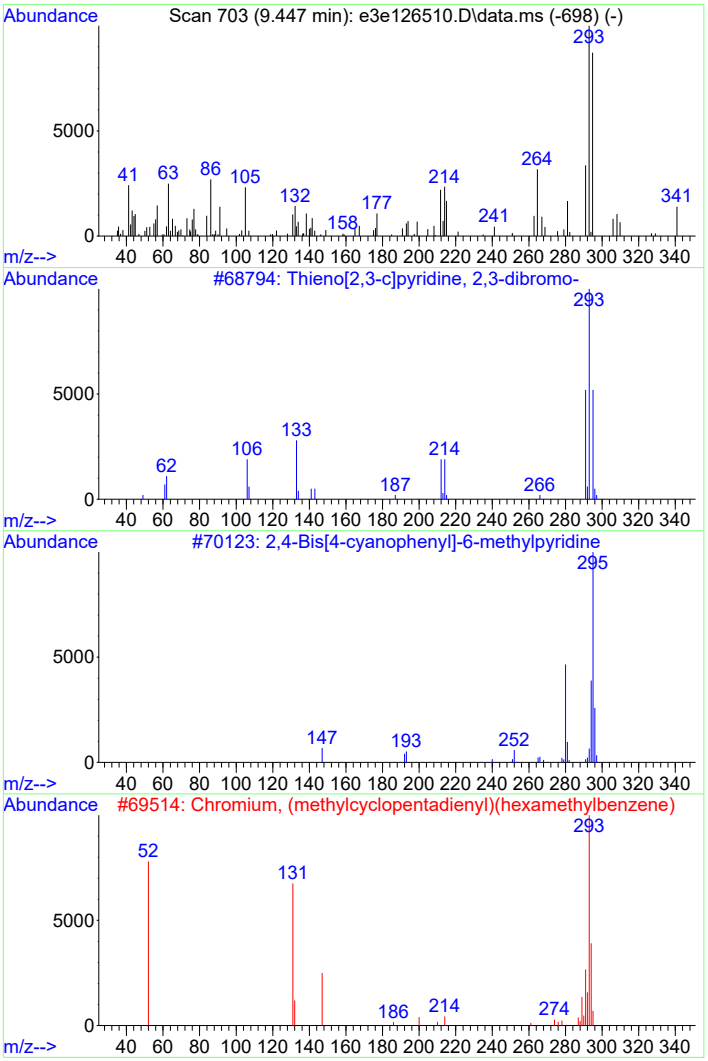
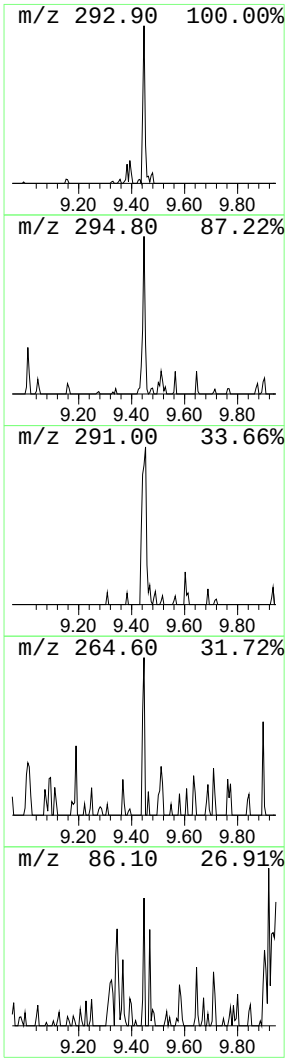
Peak Number 46 Thieno[2,3-c]pyridine, 2,3-... Concentration Rank 40

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.447	0.00	49265	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Thieno[2,3-c]pyridine, 2,3-dibromo-	291	C7H3Br2NS	028783-19-9	37
2	2,4-Bis[4-cyanophenyl]-6-methylp...	295	C20H13N3	000000-00-0	22
3	Chromium, (methylcyclopentadieny...	293	C18H25Cr	000000-00-0	16
4	2,6-Bis(1,1-dimethylethyl)cycloh...	295	C20H25NO	014329-20-5	14
5	Silane, (3,5-dibromophenyl)trime...	306	C9H12Br2Si	017878-23-8	10





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:12 2025 18

Library Search Compound Report

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Acq On    :  9 Jan 2025    4:17 pm
Operator  : (b) (6)
Sample    : da69665-1ta
Misc      : op60797,e3e5888,1,,,1,1
ALS Vial  : 8   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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Peak Number 47  Siloxane                          Concentration Rank 24
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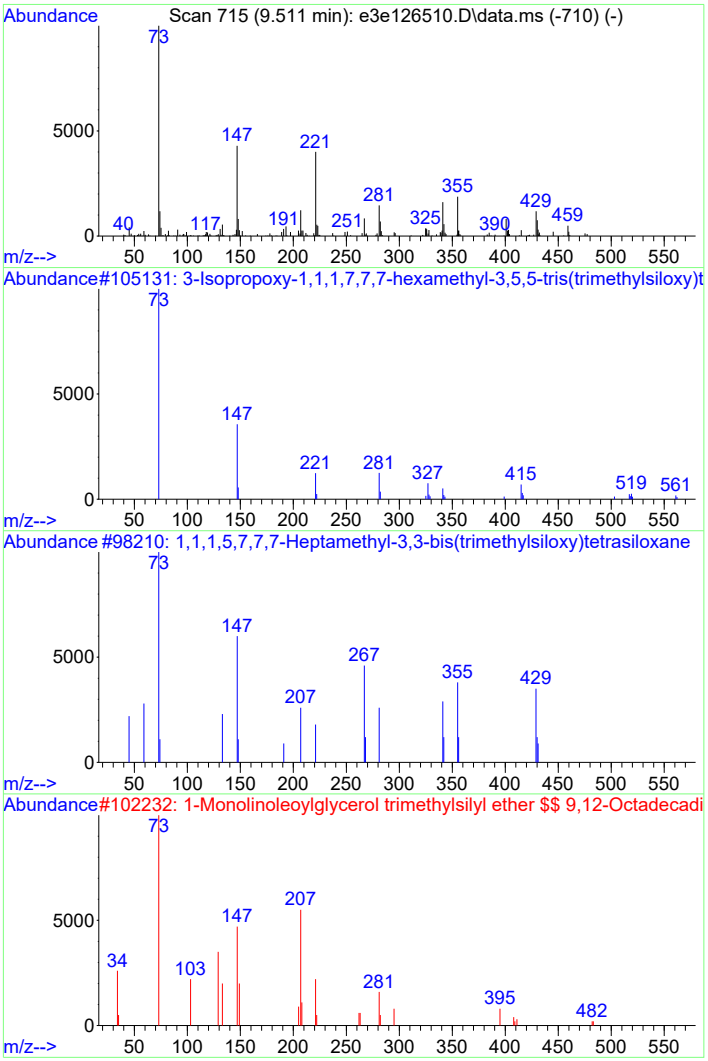
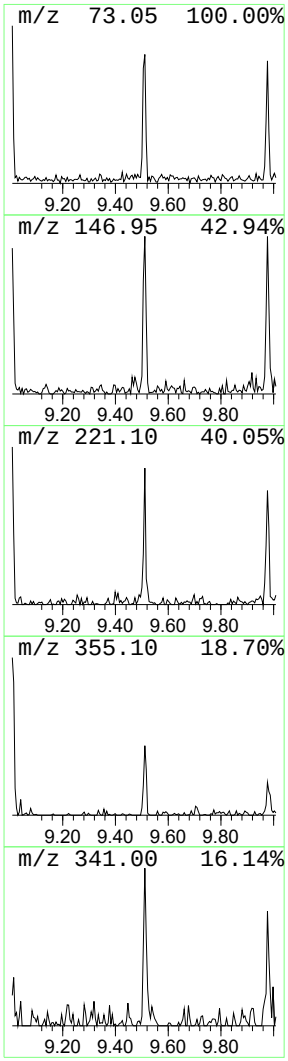
R.T.	EstConc	Area	Relative to ISTD	R.T.
9.511	0.00	182738	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	25
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	23
3	1-Monolinoleoylglycerol trimethy...	498	C27H54O4Si2	054284-45-6	20
4	3-Trimethylsilyloxystearic acid,...	444	C24H52O3Si2	000000-00-0	16
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:14 2025 : 19

Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

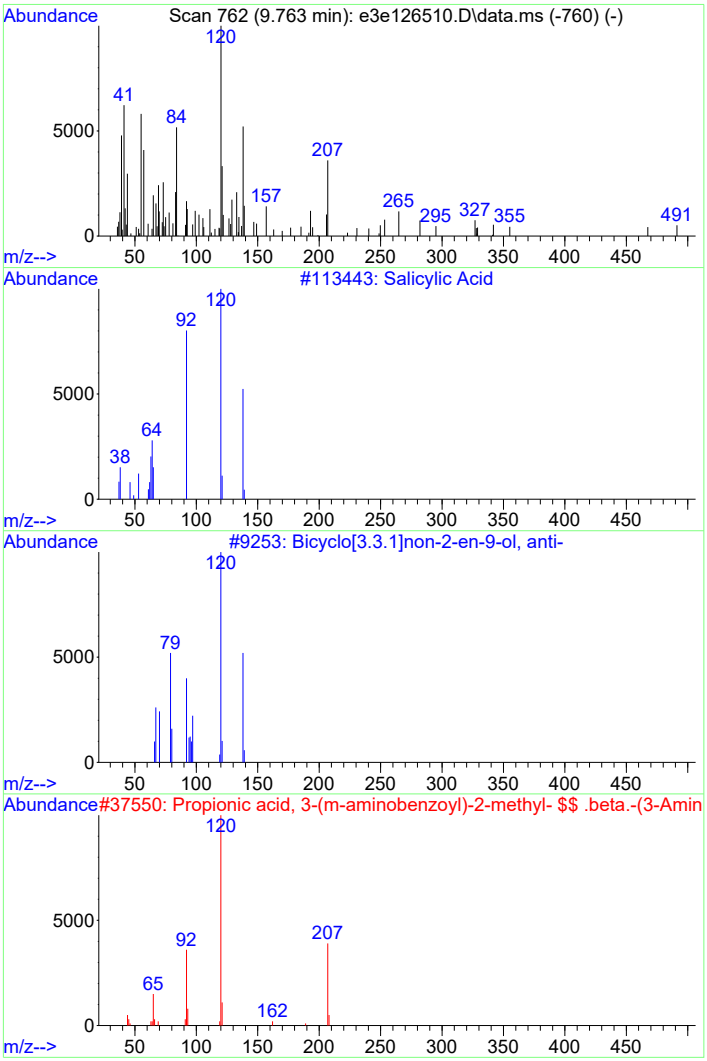
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

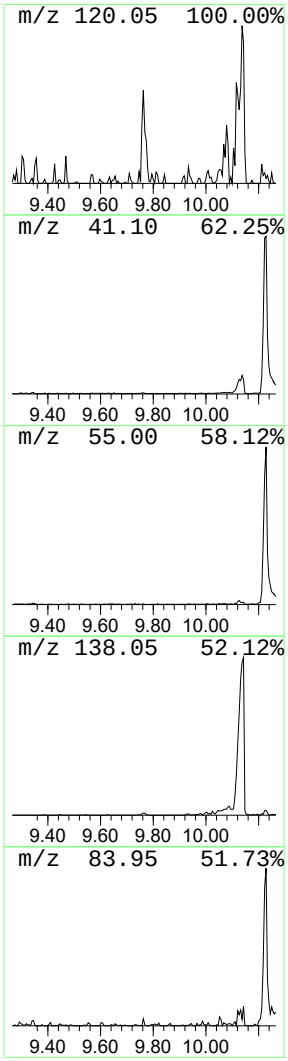
****

Peak Number 52 Salicylic Acid Concentration Rank 55

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.763	0.00	26576	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Salicylic Acid	138	C7H6O3	000069-72-7	37
2	Bicyclo[3.3.1]non-2-en-9-ol, anti-	138	C9H14O	024844-19-7	37
3	Propionic acid, 3-(m-aminobenzoy...	207	C11H13NO3	034270-86-5	35
4	1-Butanone, 1-(4-aminophenyl)- $...	163	C10H13NO	001688-71-7	27
5	Salicylic Acid	138	C7H6O3	000069-72-7	25





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:16 2025 20

Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

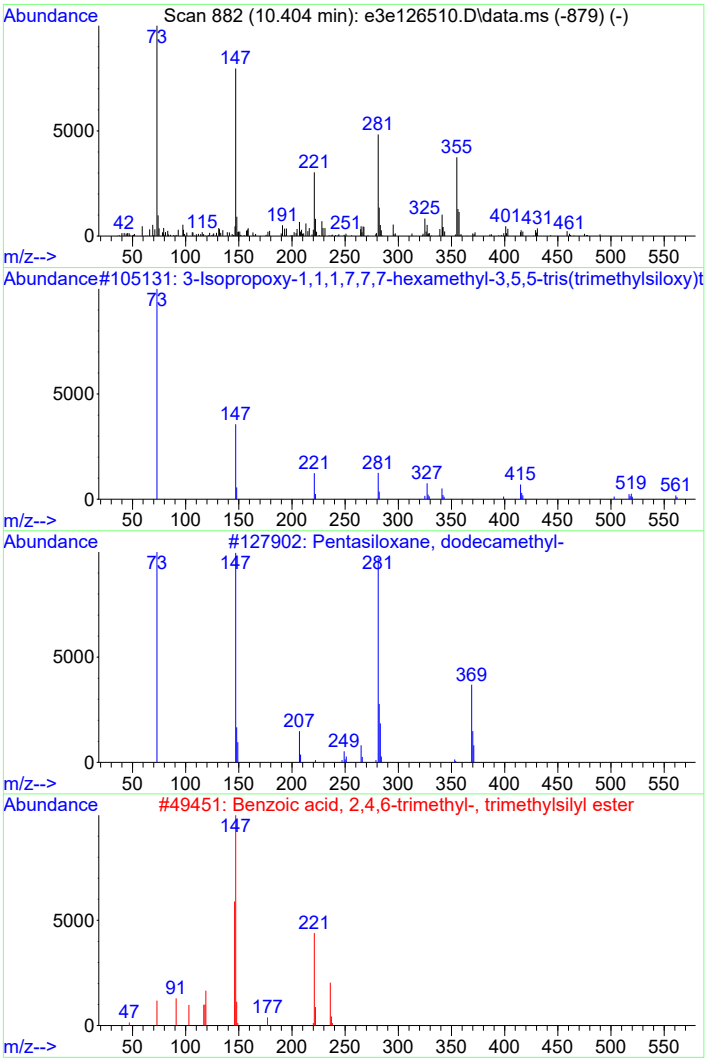
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

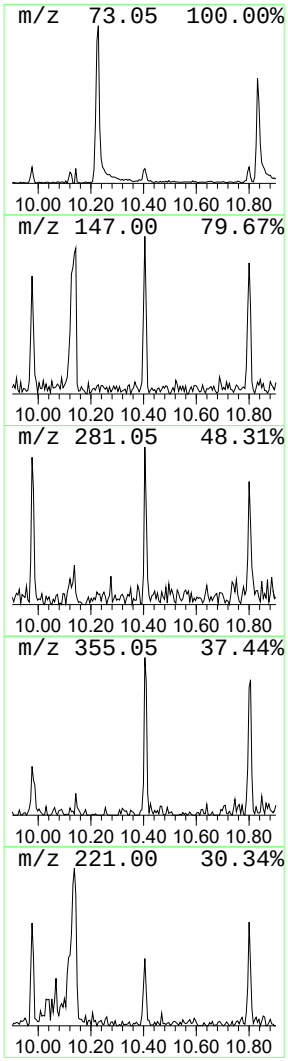
****

Peak Number 55 Siloxane Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.404	0.00	279524	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	37
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	32
3	Benzoic acid, 2,4,6-trimethyl-, ...	236	C13H20O2Si	070079-88-8	27
4	Benzene, 1,2,4-trimethyl-5-(1-me...	162	C12H18	010222-95-4	27
5	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	16





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:18 2025 21

Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

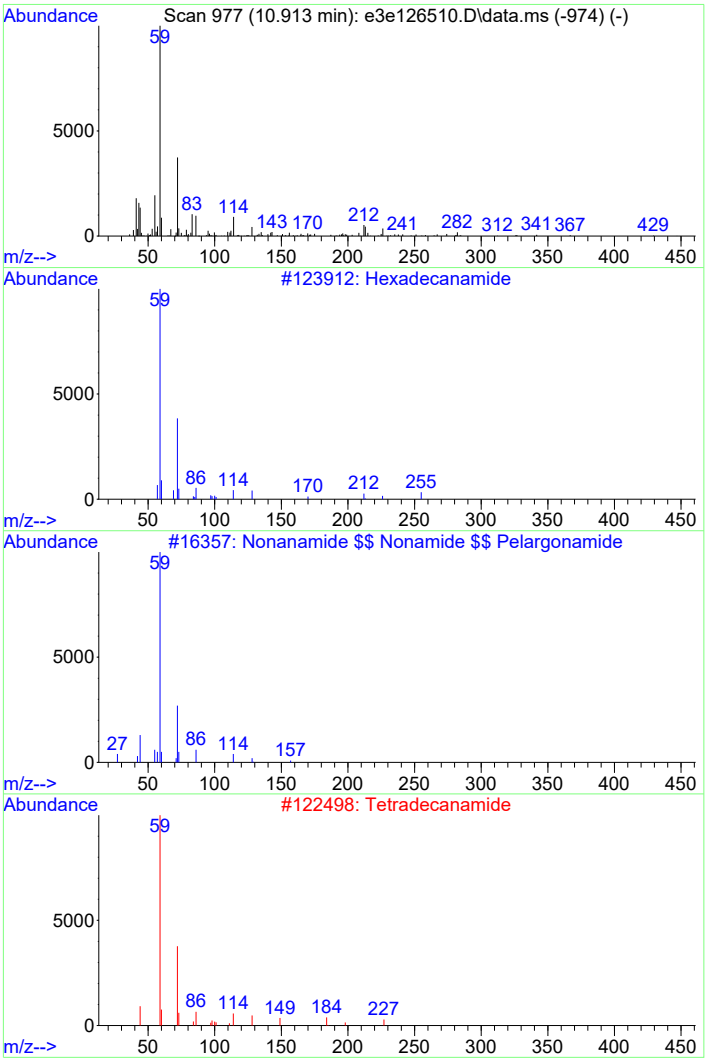
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

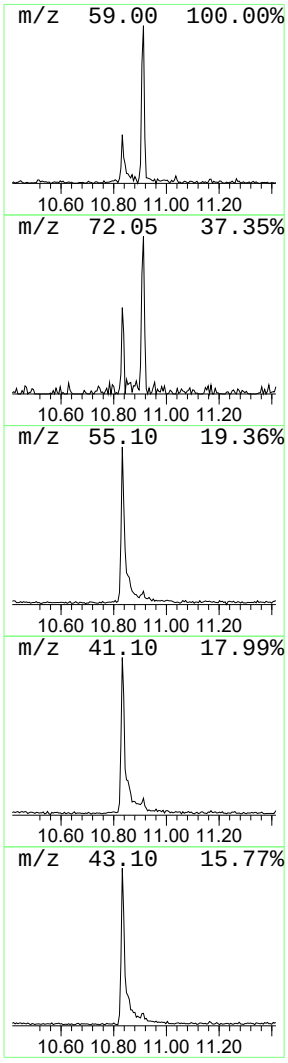
****

Peak Number 56 Hexadecanamide Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.913	0.00	321447	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecanamide	255	C16H33NO	000629-54-9	64
2	Nonanamide $$ Nonamide $$ Pelarg...	157	C9H19NO	001120-07-6	56
3	Tetradecanamide	227	C14H29NO	000638-58-4	56
4	Octadecanamide $$ Stearamide $$ ...	283	C18H37NO	000124-26-5	50
5	9-Octadecenamide, (Z)- $$ Adogen...	281	C18H35NO	000301-02-0	45





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:20 2025 22

Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
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Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

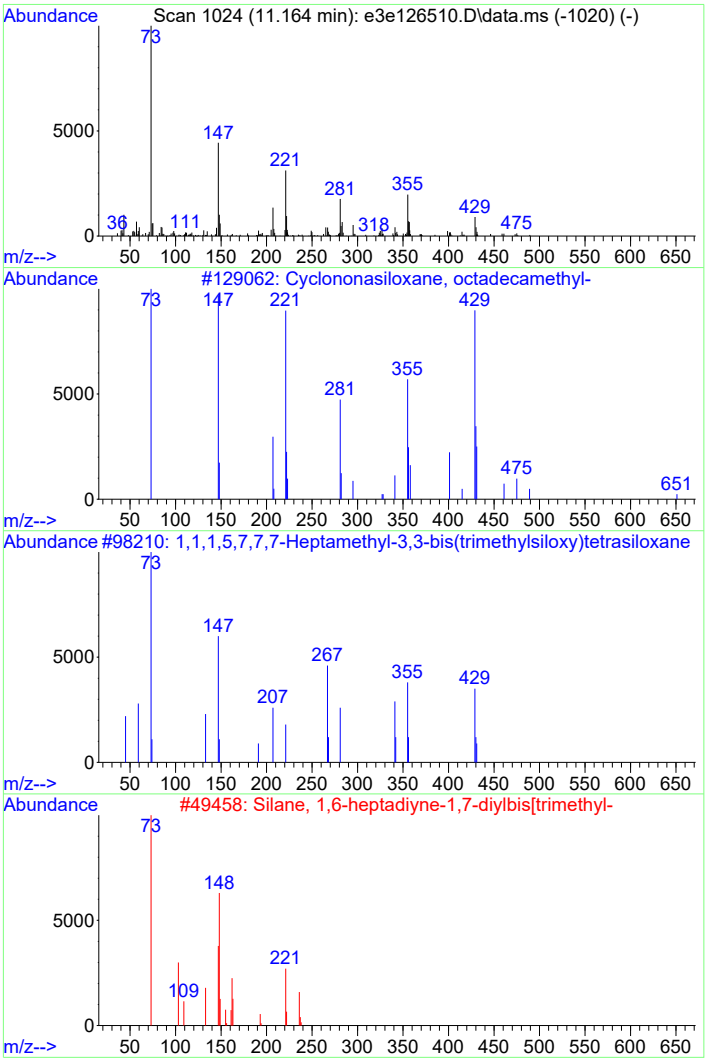
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

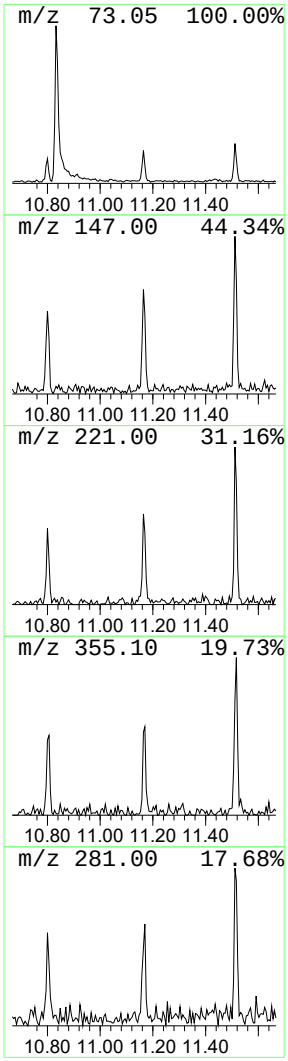
****

Peak Number 57 Siloxane Concentration Rank 21

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.164	0.00	257365	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	58
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	42
3	Silane, 1,6-heptadiyne-1,7-diylb...	236	C13H24Si2	041268-43-3	28
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	17
5	1,2-Epoxy-3,4-dihydroxycyclohexa...	530	C32H42O3Si2	000000-00-0	16





Library Search Compound Report

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Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

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Quant Title : 8270C Calibration

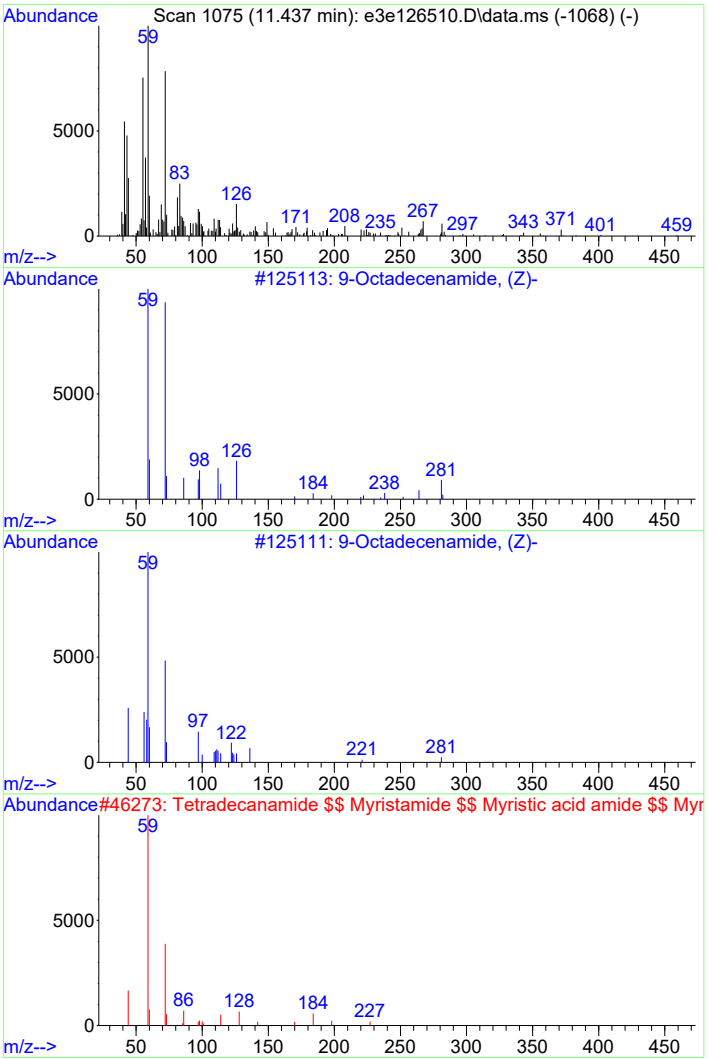
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

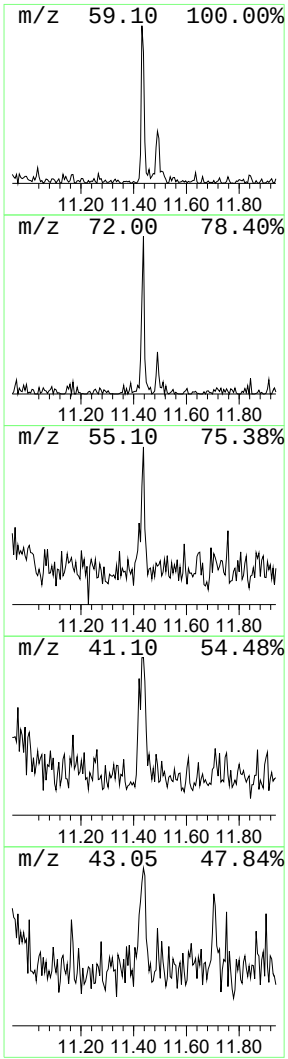
****

Peak Number 58 Octadecenamide Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.437	0.00	296936	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9-Octadecenamide, (Z)-	281	C18H35NO	000301-02-0	90
2	9-Octadecenamide, (Z)-	281	C18H35NO	000301-02-0	50
3	Tetradecanamide $$ Myristamide $...	227	C14H29NO	000638-58-4	38
4	Hexadecanamide $$ Palmitamide $$...	255	C16H33NO	000629-54-9	37
5	9-Octadecenamide, (Z)-	281	C18H35NO	000301-02-0	35





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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

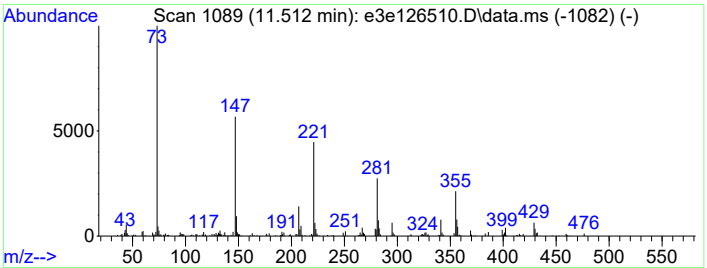
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

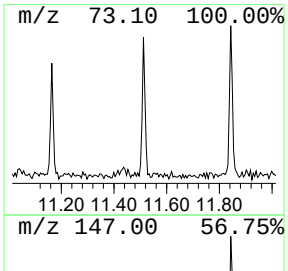
****

Peak Number 59 Siloxane Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.512	0.00	325539	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9,12,15-Octadecatrienoic acid, 2...	496	C27H52O4Si2	055521-22-7	38
2	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	16
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	16
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
5	Tris(trimethylsilyl)borate	278	C9H27BO3Si3	004325-85-3	12





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

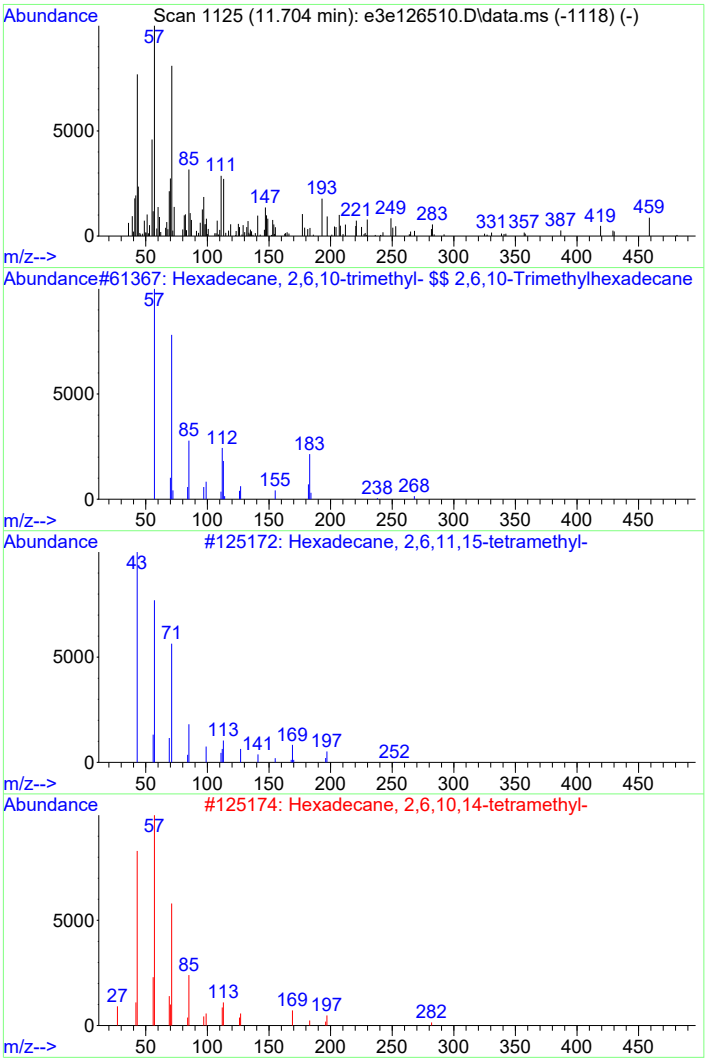
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

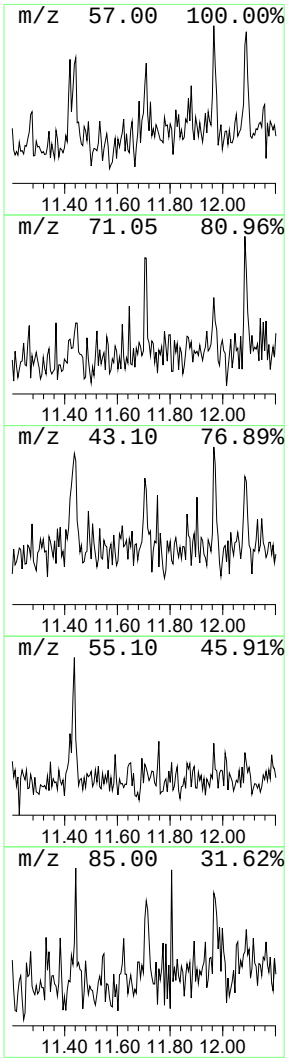
****

Peak Number 62 Alkane Concentration Rank 26

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.704	0.00	156296	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecane, 2,6,10-trimethyl- $$...	268	C19H40	055000-52-7	64
2	Hexadecane, 2,6,11,15-tetramethyl-	282	C20H42	000504-44-9	53
3	Hexadecane, 2,6,10,14-tetramethyl-	282	C20H42	000638-36-8	52
4	Nonadecane	268	C19H40	000629-92-5	49
5	Undecane, 2,8-dimethyl-	184	C13H28	017301-25-6	47





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(b) (4)

DA69665T

Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

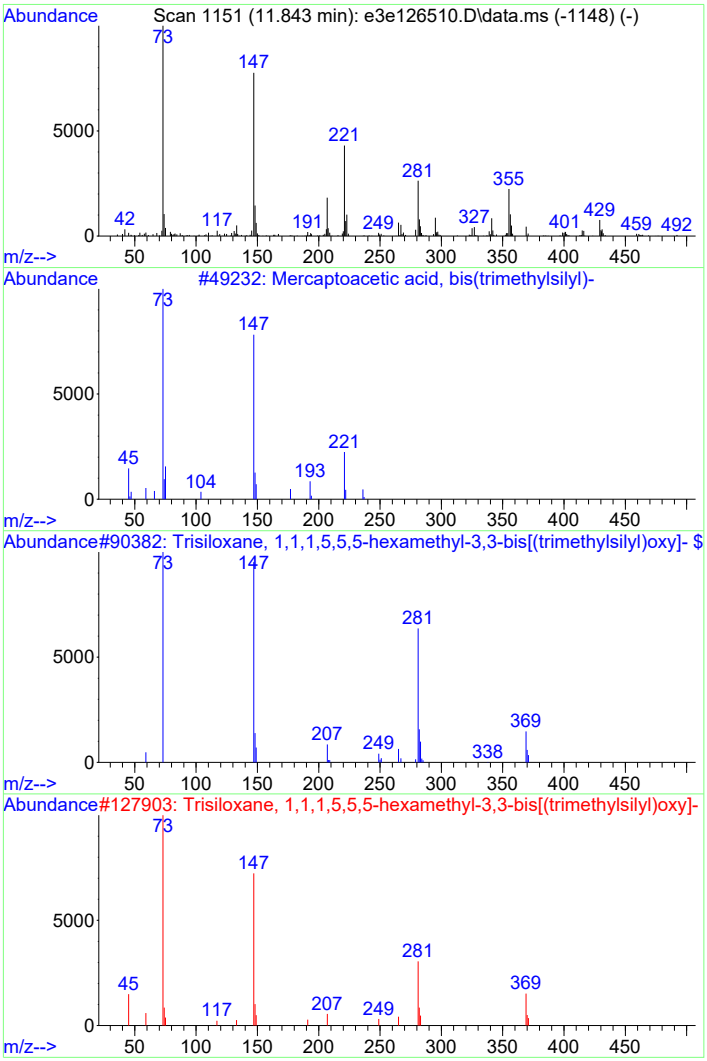
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

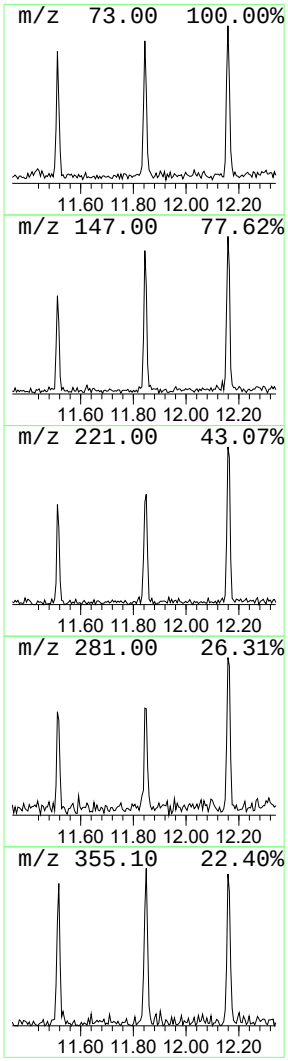
****

Peak Number 64 Siloxane Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.843	0.00	394735	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	50
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	46
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	43
4	2-Propenoic acid, 2-[(trimethyls...	232	C9H20O3Si2	055191-13-4	35
5	Ethanedioic acid, bis(trimethyls...	234	C8H18O4Si2	018294-04-7	35





Appendix C. Tier 1 Analysis Tech Memos

Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

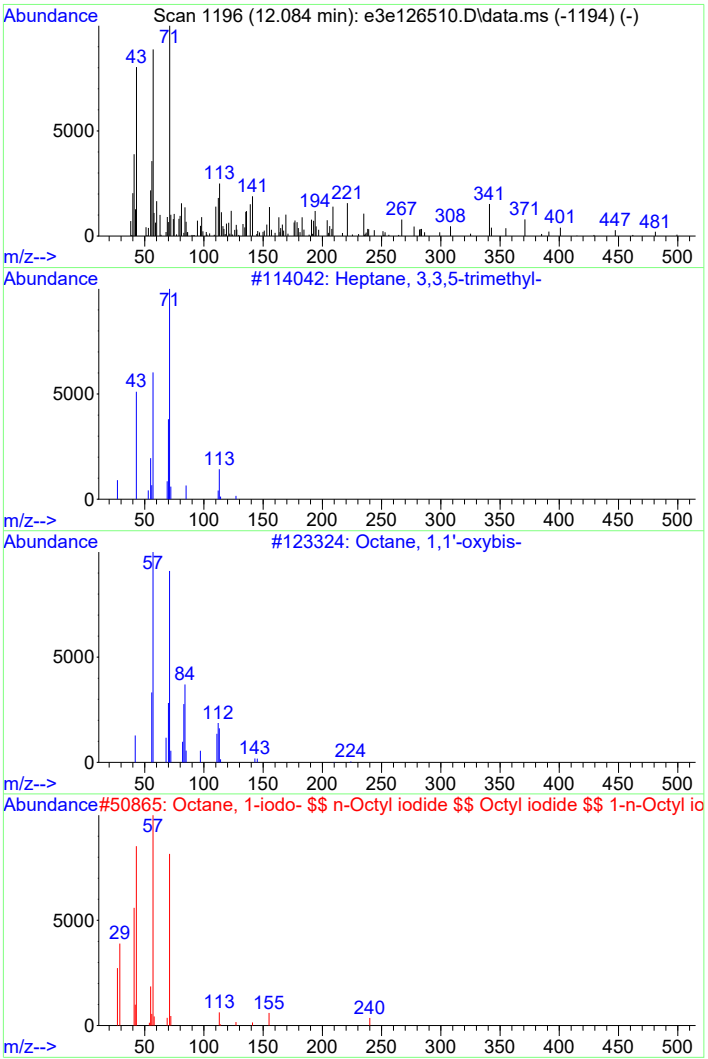
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

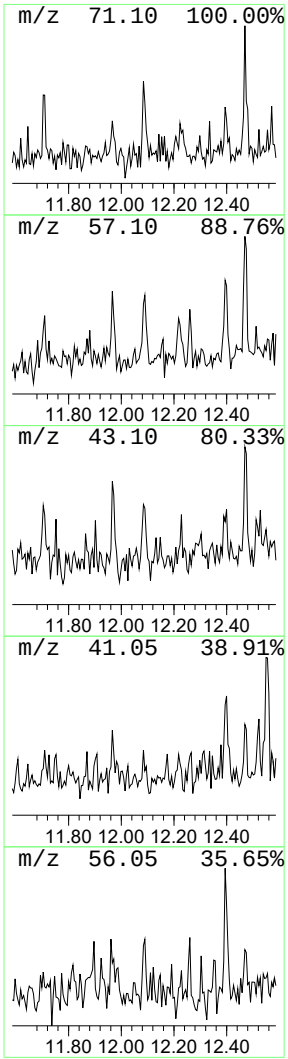
****

Peak Number 66 Alkane Concentration Rank 29

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.084	0.00	87015	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptane, 3,3,5-trimethyl-	142	C10H22	007154-80-5	47
2	Octane, 1,1'-oxybis-	242	C16H34O	000629-82-3	47
3	Octane, 1-iodo- $$ n-Octyl iodid...	240	C8H17I	000629-27-6	47
4	Octane, 2-iodo- $$ sec-Octyl Iod...	240	C8H17I	000557-36-8	47
5	Octane, 2-bromo-	192	C8H17Br	000557-35-7	47





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Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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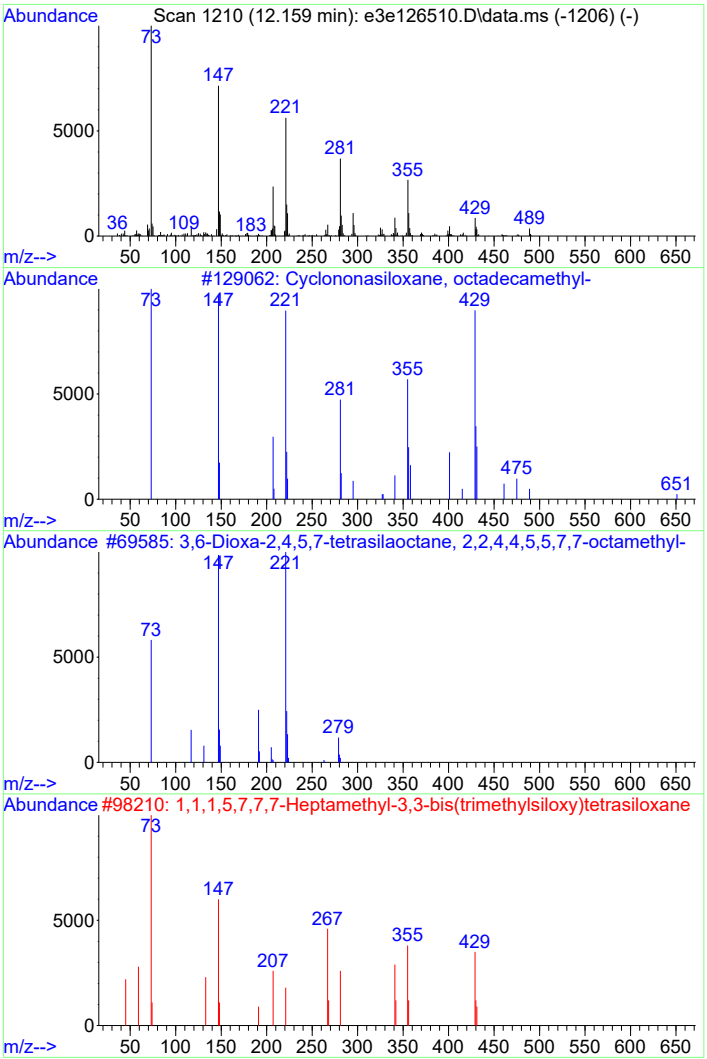
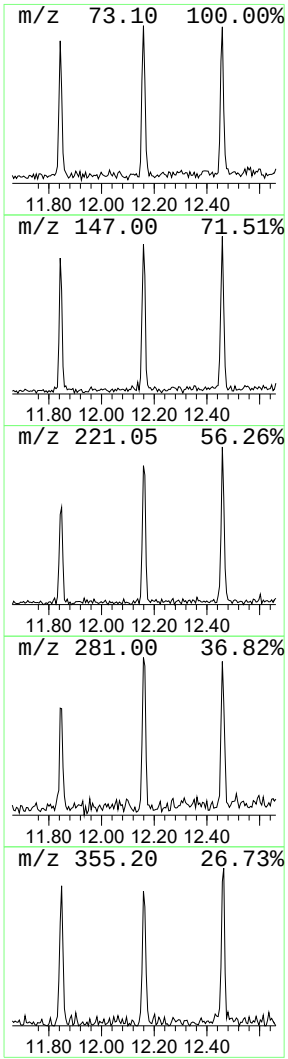
Peak Number 67 Siloxane Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.159	0.00	522750	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	59
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
3	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	23
4	Nickel, bis(N,N,N'-trimethyl-o-p...	356	C18H26N4Ni	000000-00-0	14
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12





Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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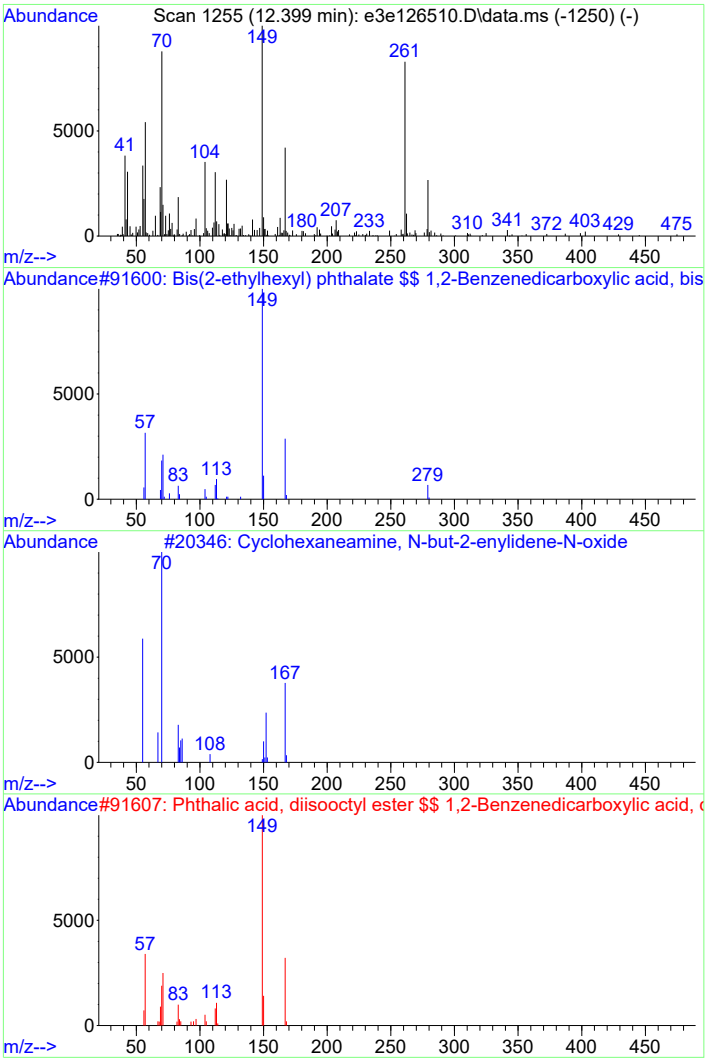
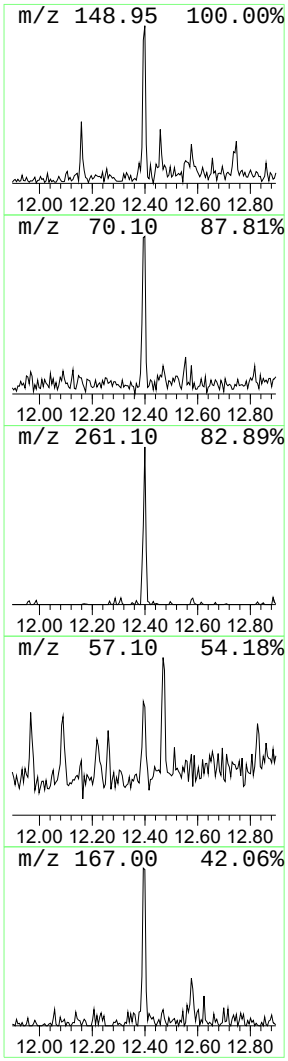
Peak Number 71 Phthalate Concentration Rank 22

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.399	0.00	219197	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Bis(2-ethylhexyl) phthalate $$ 1...	390	C24H38O4	000117-81-7	12
2	Cyclohexaneamine, N-but-2-enylid...	167	C10H17NO	068048-01-1	12
3	Phthalic acid, diisooctyl ester ...	390	C24H38O4	001330-91-2	12
4	Pyrrolidine, 2.alpha.-[1-pyrroli...	168	C9H16N2O	000000-00-0	10
5	1-(2-Hydroxymethylpyrrolidin-1-y...	143	C7H13NO2	000000-00-0	10





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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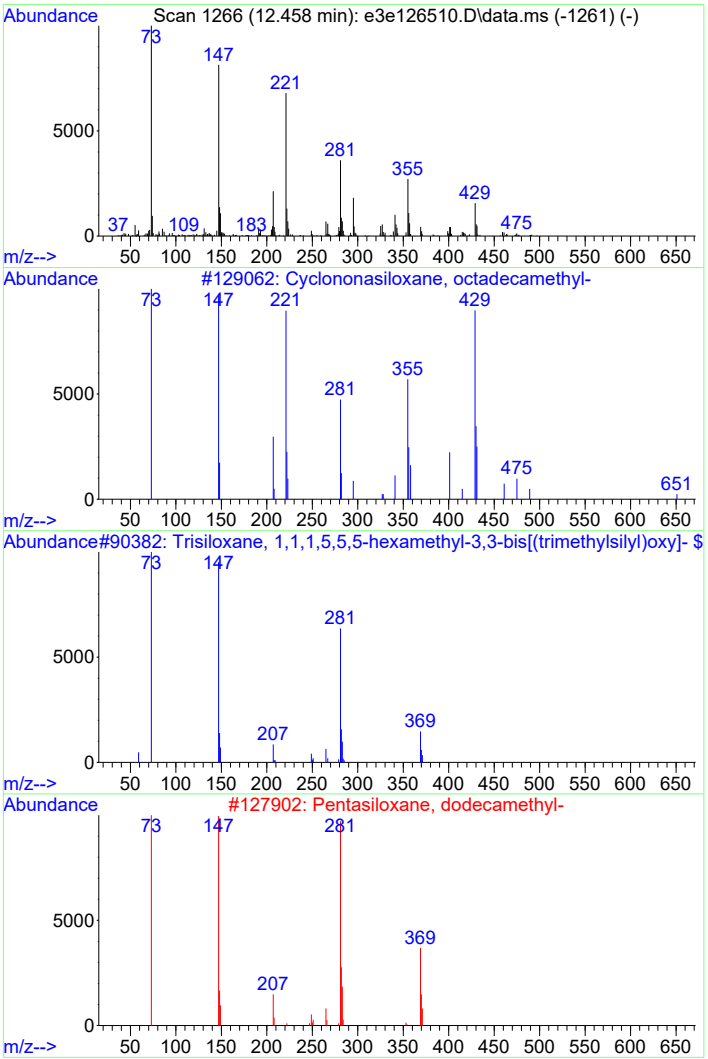
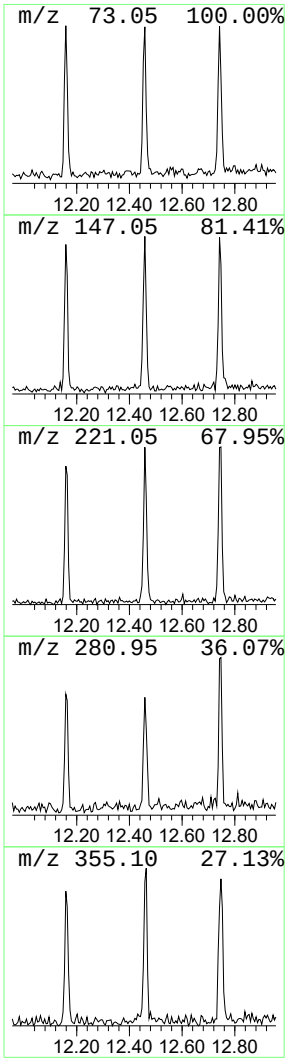
Peak Number 72 Siloxane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.458	0.00	634528	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	86
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	43
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	43
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	38
5	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	38





Library Search Compound Report

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Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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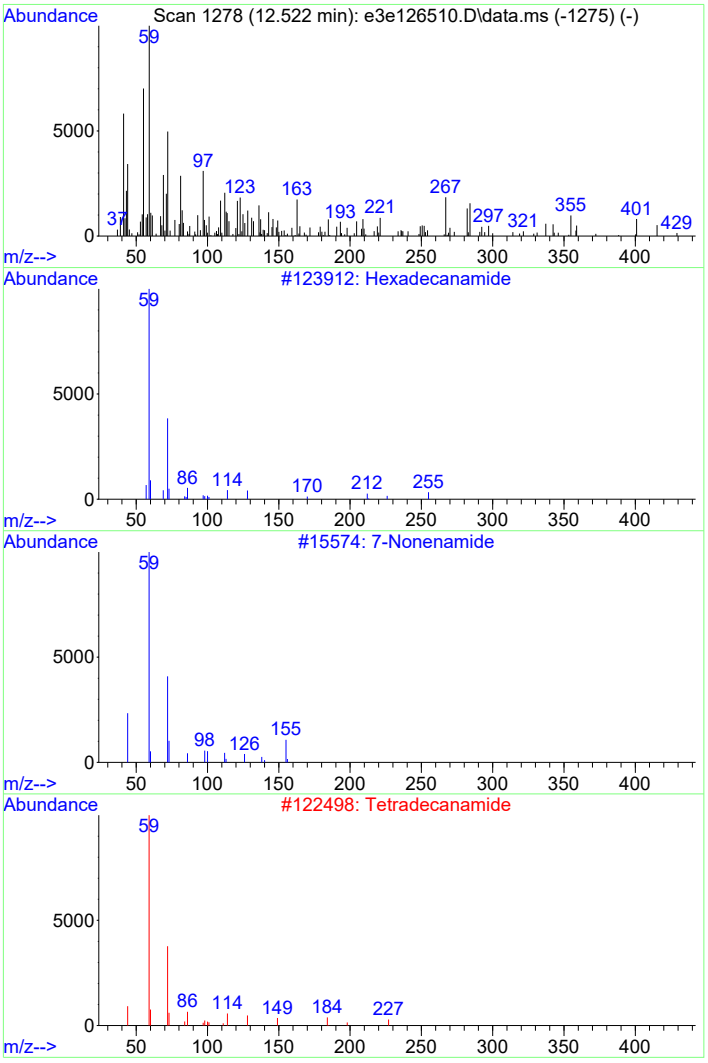
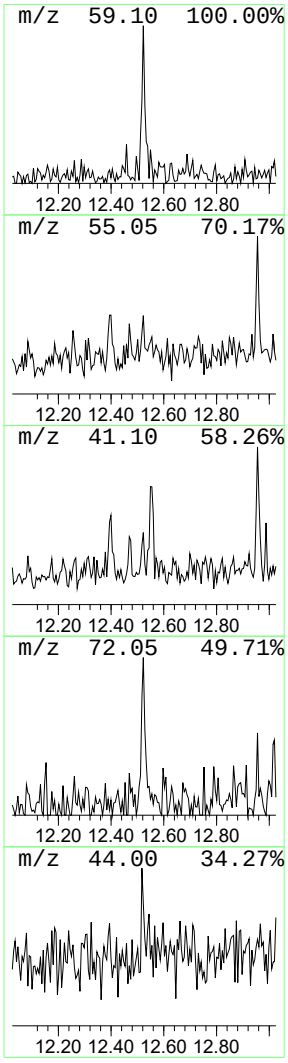
Peak Number 73 Hexadecanamide Concentration Rank 31

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.523	0.00	68148	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecanamide	255	C16H33NO	000629-54-9	50
2	7-Nonenamide	155	C9H17NO	090949-53-4	47
3	Tetradecanamide	227	C14H29NO	000638-58-4	47
4	Erucylamide	337	C22H43NO	000112-84-5	40
5	9-Octadecenamide, (Z)- $$ Adogen...	281	C18H35NO	000301-02-0	40





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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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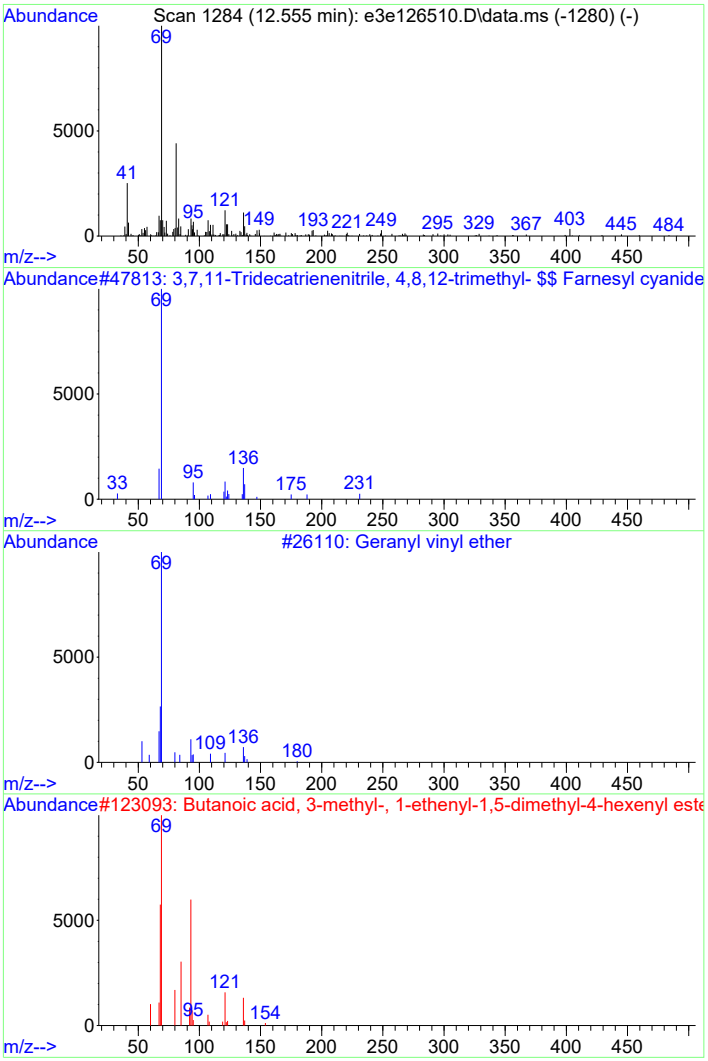
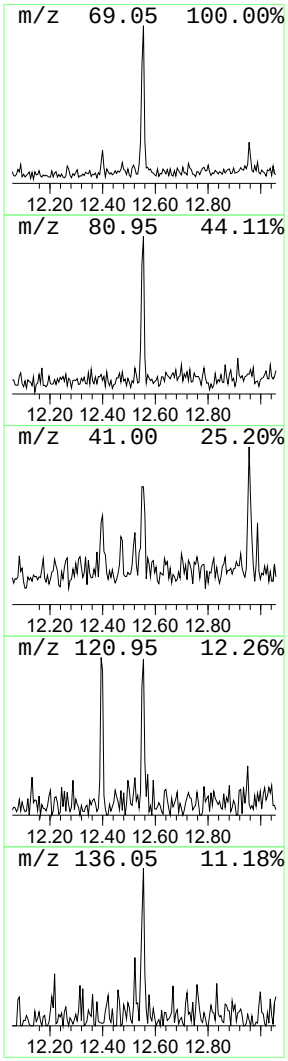
Peak Number 74 1,5-Heptadiene, 2,6-dimethyl- Concentration Rank 25

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.555	0.00	172700	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,7,11-Tridecatrienenitrile, 4,8...	231	C16H25N	006006-01-5	64
2	Geranyl vinyl ether	180	C12H20O	000000-00-0	64
3	Butanoic acid, 3-methyl-, 1-ethe...	238	C15H26O2	001118-27-0	64
4	Butanoic acid, 3-methyl-, 1-ethe...	238	C15H26O2	001118-27-0	64
5	1,5-Heptadiene, 2,6-dimethyl-	124	C9H16	006709-39-3	52





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:40 2025 33

Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

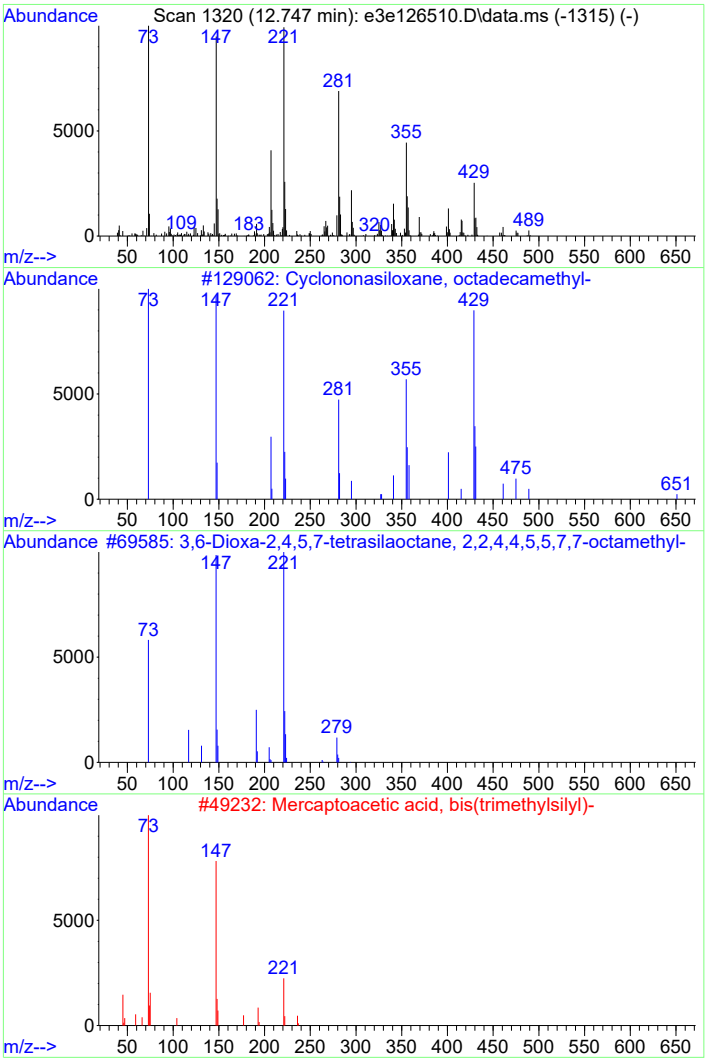
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

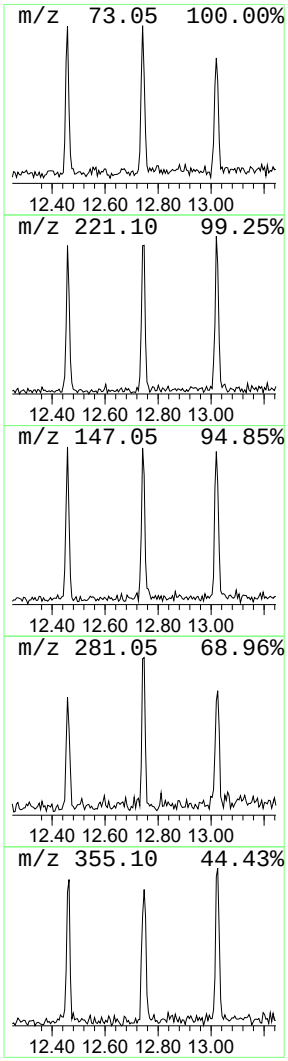
****

Peak Number 75 Siloxane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.747	0.00	598630	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	74
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	32
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	25
4	1,1,1,3,5,5,7,7,7-Nonamethyl-3-(...	384	C12H36O4Si5	038146-99-5	16
5	Trisiloxane, octamethyl- $$ Octa...	236	C8H24O2Si3	000107-51-7	14





Library Search Compound Report

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Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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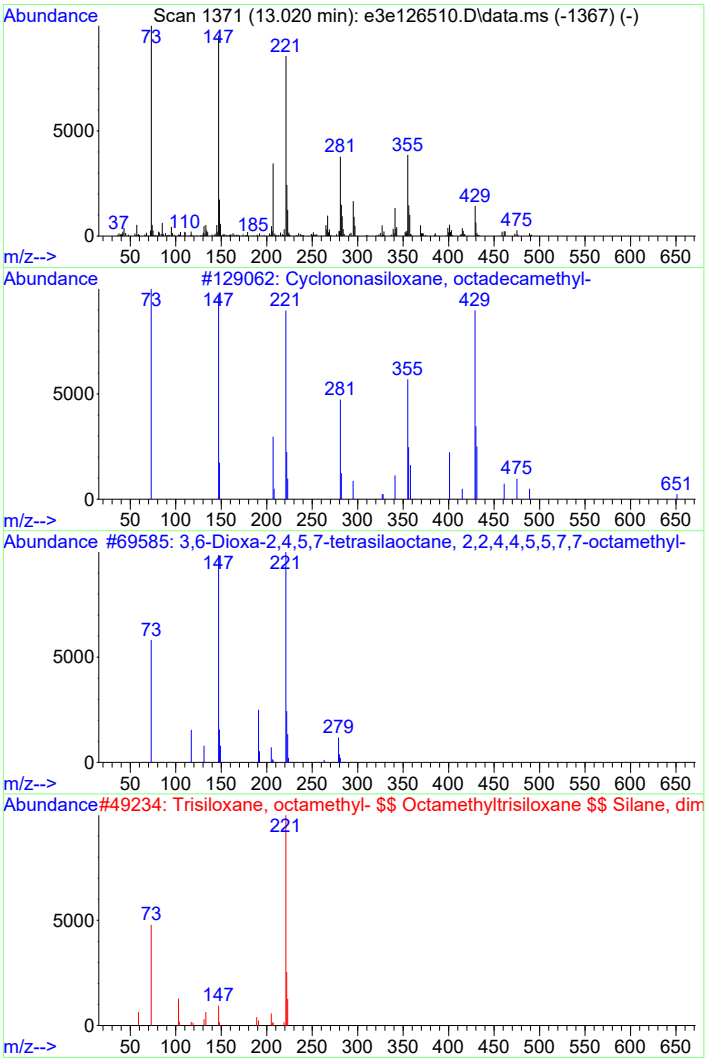
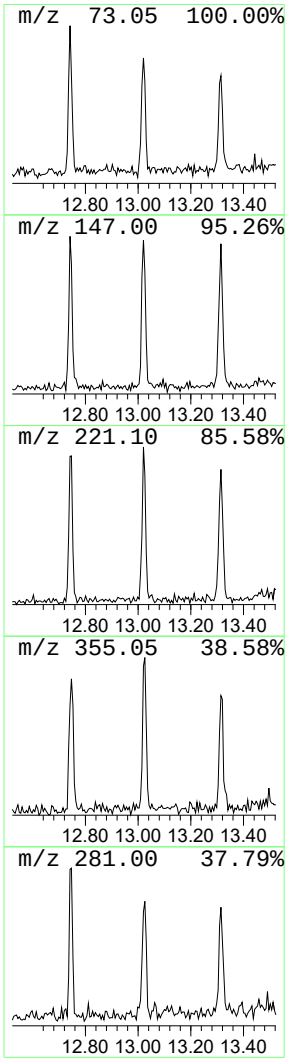
Peak Number 77 Siloxane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.020	0.00	584513	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	86
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
3	Trisiloxane, octamethyl- $$ Octa...	236	C8H24O2Si3	000107-51-7	16
4	Tris(trimethylsilyl)borate	278	C9H27BO3Si3	004325-85-3	16
5	1-Aza-2-sila-5-boracyclopent-3-e...	221	C12H24BNSi	081620-70-4	12





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:43 2025 35

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

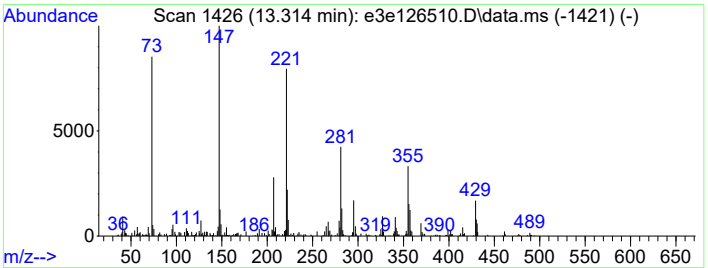
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

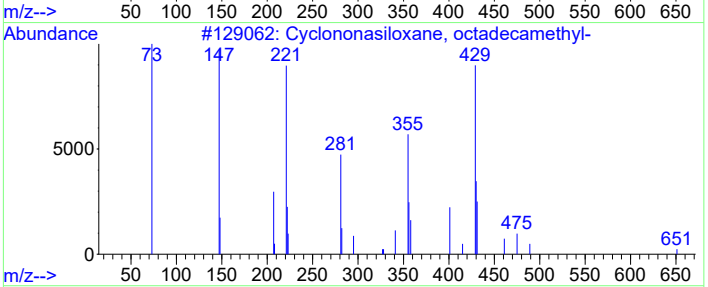
****

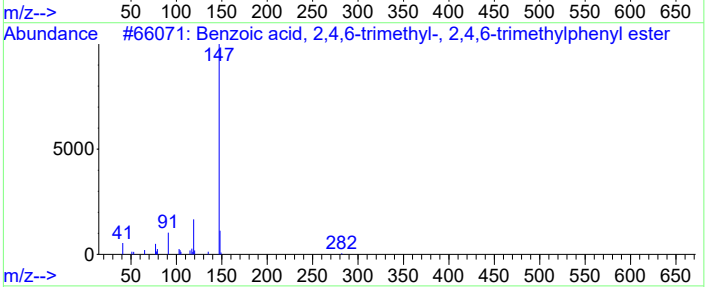
Peak Number 78 Siloxane Concentration Rank 6

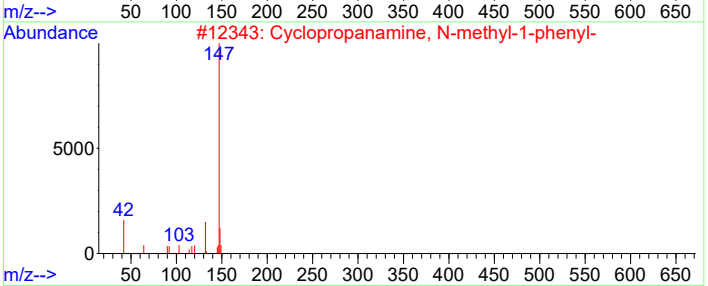
R.T.	EstConc	Area	Relative to ISTD	R.T.
13.314	0.00	588929	External Standard	0.000

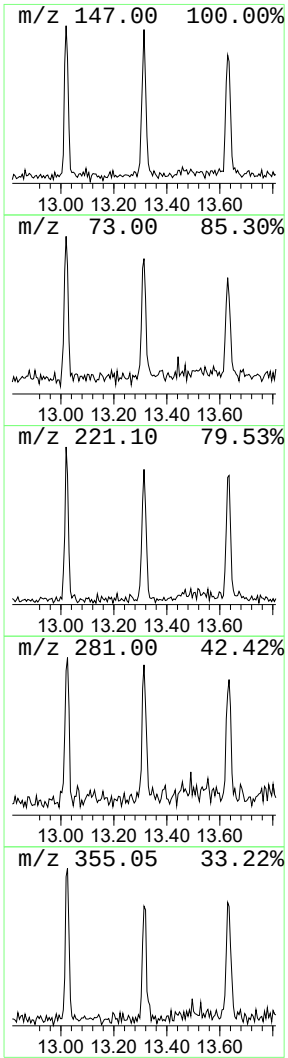
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	91
2	Benzoic acid, 2,4,6-trimethyl-, ...	282	C19H22O2	001504-38-7	18
3	Cyclopropanamine, N-methyl-1-phe...	147	C10H13N	056771-48-3	14
4	6-Phenyl-3,5-dithioxo-2,3,4,5-te...	221	C9H7N3S2	000000-00-0	14
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12











AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:45 2025 36

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

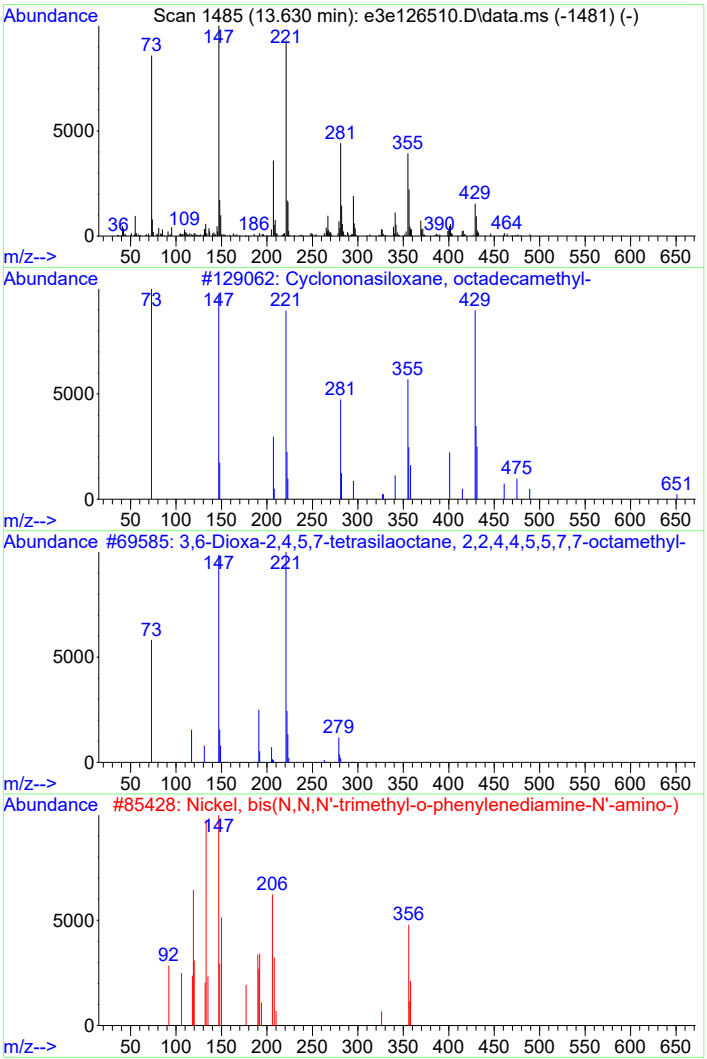
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

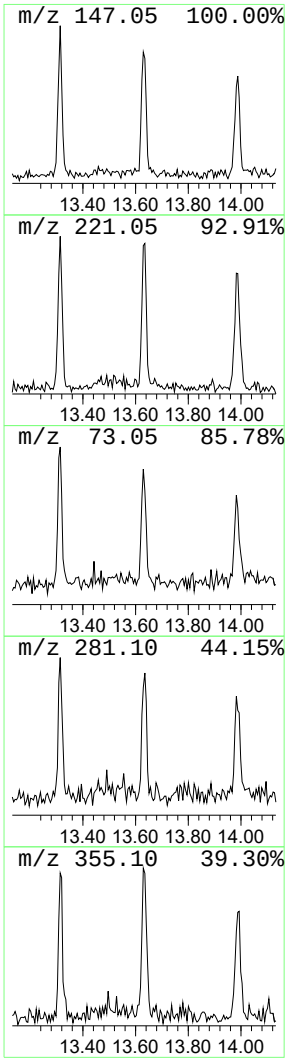
****

Peak Number 79 Siloxane Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.630	0.00	583050	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	78
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	37
3	Nickel, bis(N,N,N'-trimethyl-o-p...	356	C18H26N4Ni	000000-00-0	25
4	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	16
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	16





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

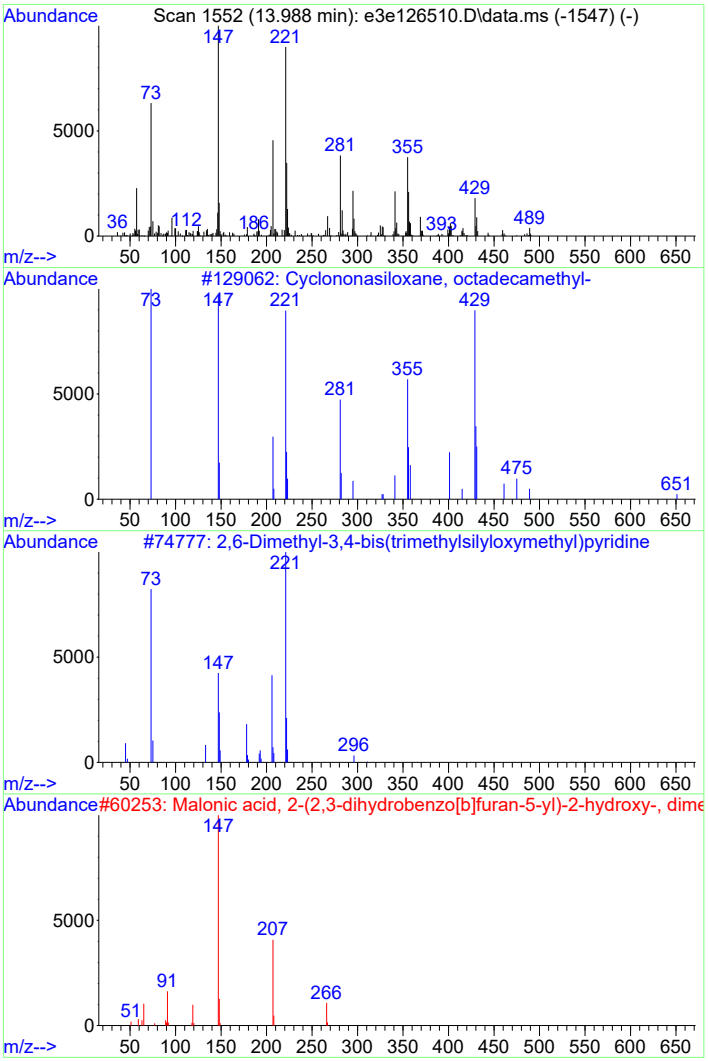
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

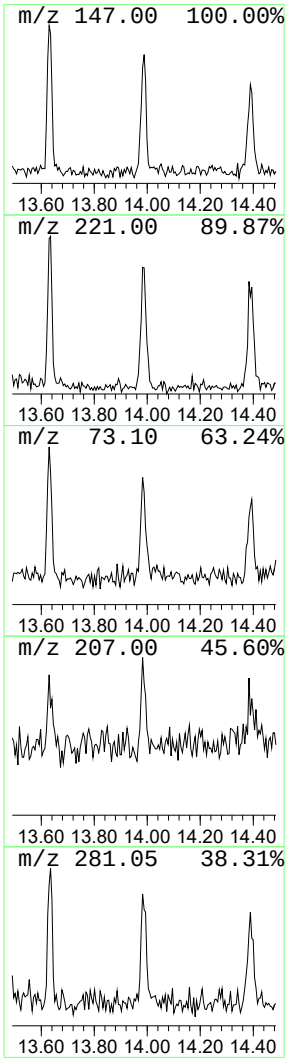
****

Peak Number 80 Siloxane Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.988	0.00	519402	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	43
2	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	14
3	Malonic acid, 2-(2,3-dihydrobenz...	266	C13H14O6	000000-00-0	12
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
5	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	10





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:48 2025 38

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

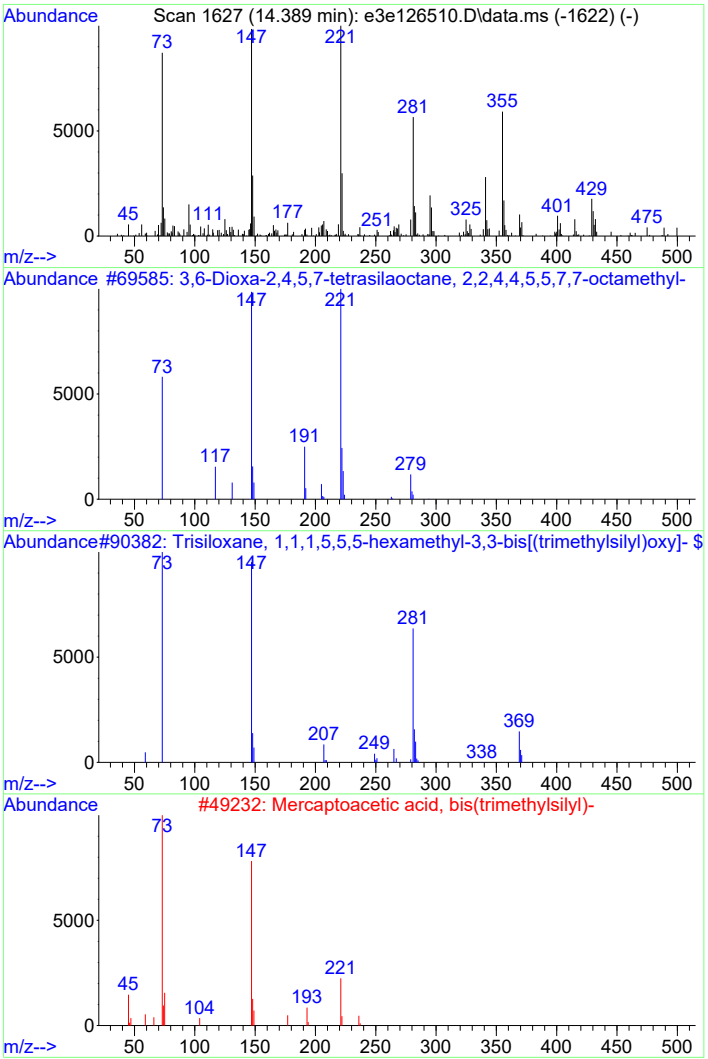
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

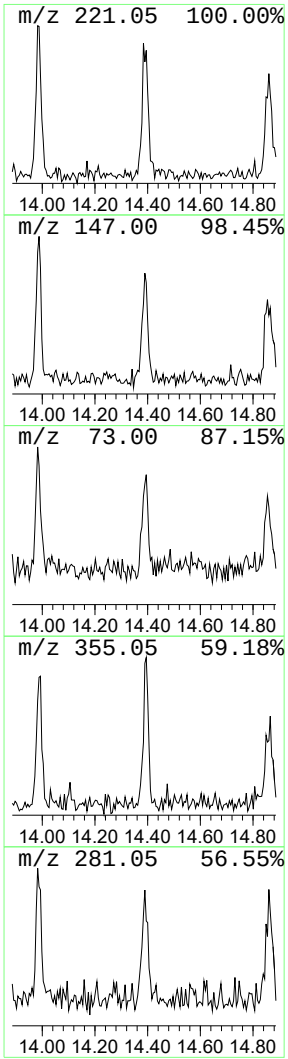
****

Peak Number 81 Siloxane Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.389	0.00	482445	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	37
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	23
4	4-Acetyl-3-methoxycarbonylmethyl...	253	C12H15NO5	073869-95-1	14
5	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	12





AECOM_e3g_TPHEXT.M Fri Jan 10 11:28:50 2025 39

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

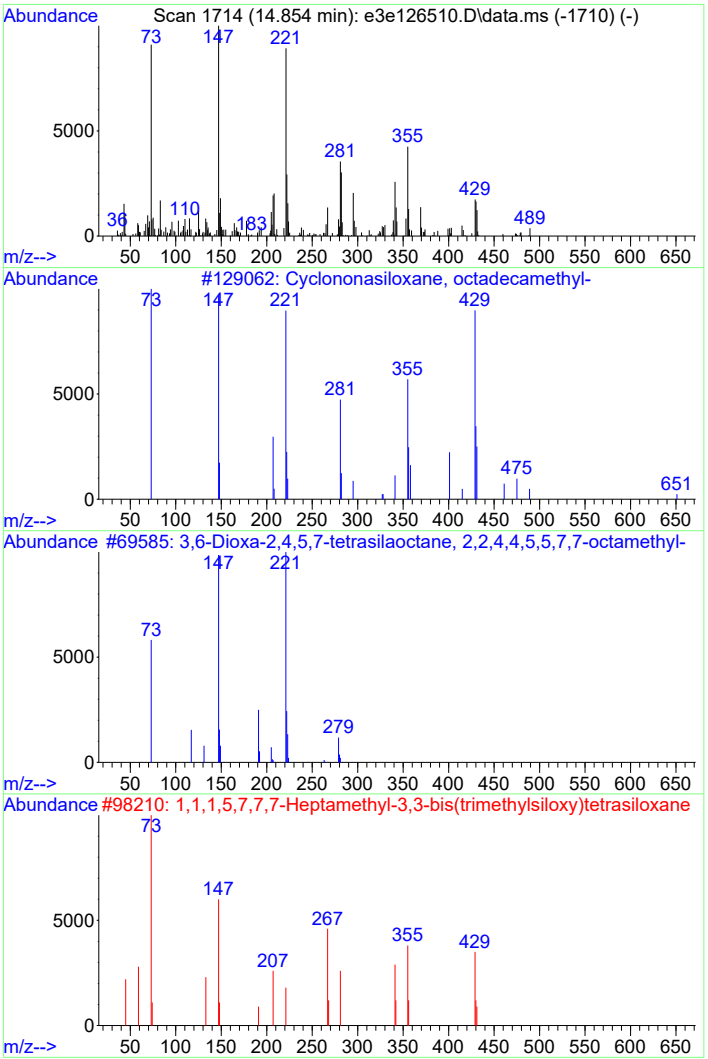
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

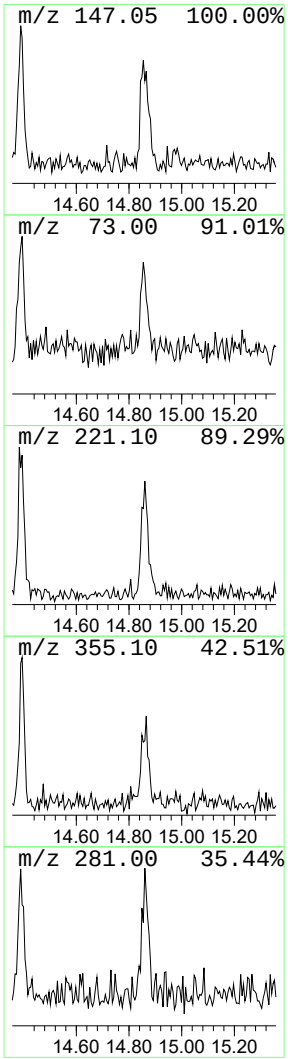
****

Peak Number 82 Siloxane Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.855	0.00	395495	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	23
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	23
3	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	17
4	Trisiloxane, octamethyl- $$ Octa...	236	C8H24O2Si3	000107-51-7	14
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	10





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

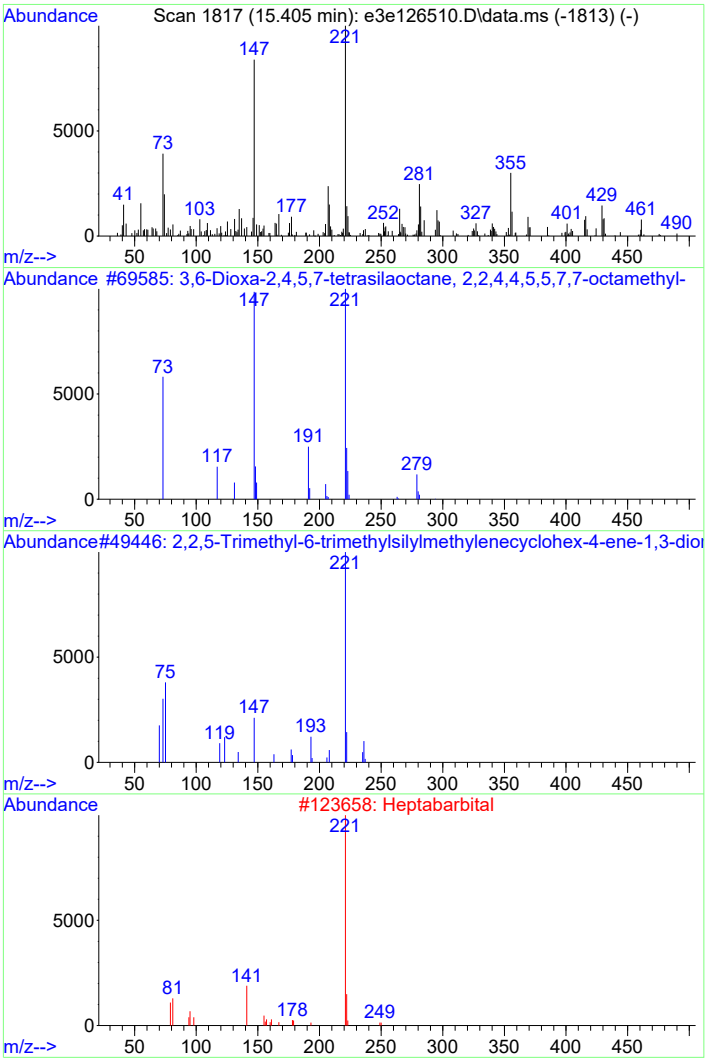
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

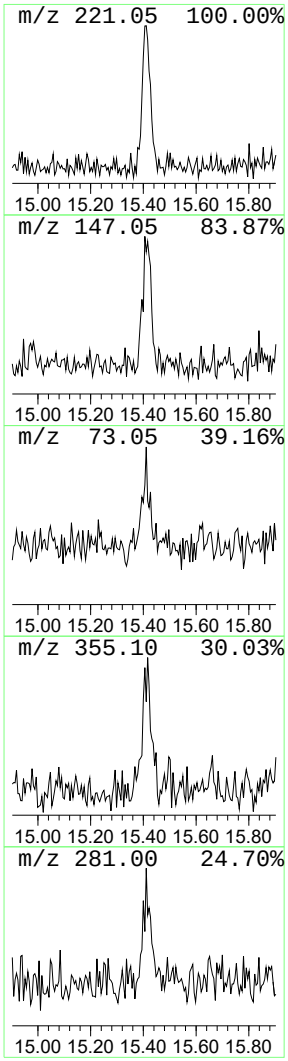
****

Peak Number 83 Siloxane Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.405	0.00	403809	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	32
2	2,2,5-Trimethyl-6-trimethylsilyl...	236	C13H20O2Si	000000-00-0	25
3	Heptabarbital	250	C13H18N2O3	000509-86-4	18
4	1,3,5-Benzenetricarboxylic acid,...	252	C12H12O6	002672-58-4	16
5	Aetamide, N1-[3-(diethylamino)-4...	236	C13H20N2O2	000000-00-0	14





Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126510.D
Acq On : 9 Jan 2025 4:17 pm
Operator : (b) (6)
Sample : da69665-1ta
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc
Benzene, 2-meth...	6.682	0.0		21924	0	0.000	1	1.0
Siloxane	6.762	0.0		67631	0	0.000	1	1.0
Siloxane	7.067	0.0		929157	0	0.000	1	1.0
Siloxane	7.115	0.0		1159420	0	0.000	1	1.0
Siloxane	7.179	0.0		16637000	0	0.000	1	1.0
Alkane	7.511	0.0		32565	0	0.000	1	1.0
Siloxane	7.538	0.0		10527	0	0.000	1	1.0
Siloxane	7.768	0.0		427012	0	0.000	1	1.0
Alkane	7.912	0.0		53413	0	0.000	1	1.0
Thieno[2,3-c]py...	8.399	0.0		186307	0	0.000	1	1.0
Siloxane	8.452	0.0		516446	0	0.000	1	1.0
2,5-Cyclohexadi...	8.591	0.0		47203	0	0.000	1	1.0
Diphenylamine	9.222	0.0		34675	0	0.000	1	1.0
Thieno[2,3-c]py...	9.447	0.0		49265	0	0.000	1	1.0
Siloxane	9.511	0.0		182738	0	0.000	1	1.0
Salicylic Acid	9.763	0.0		26576	0	0.000	1	1.0
Siloxane	10.404	0.0		279524	0	0.000	1	1.0
Hexadecanamide	10.913	0.0		321447	0	0.000	1	1.0
Siloxane	11.164	0.0		257365	0	0.000	1	1.0
Octadecenamide	11.437	0.0		296936	0	0.000	1	1.0
Siloxane	11.512	0.0		325539	0	0.000	1	1.0
Alkane	11.704	0.0		156296	0	0.000	1	1.0
Siloxane	11.843	0.0		394735	0	0.000	1	1.0
Alkane	12.084	0.0		87015	0	0.000	1	1.0
Siloxane	12.159	0.0		522750	0	0.000	1	1.0
Phthalate	12.399	0.0		219197	0	0.000	1	1.0
Siloxane	12.458	0.0		634528	0	0.000	1	1.0
Hexadecanamide	12.523	0.0		68148	0	0.000	1	1.0
1,5-Heptadiene,...	12.555	0.0		172700	0	0.000	1	1.0
Siloxane	12.747	0.0		598630	0	0.000	1	1.0
Siloxane	13.020	0.0		584513	0	0.000	1	1.0
Siloxane	13.314	0.0		588929	0	0.000	1	1.0
Siloxane	13.630	0.0		583050	0	0.000	1	1.0
Siloxane	13.988	0.0		519402	0	0.000	1	1.0
Siloxane	14.389	0.0		482445	0	0.000	1	1.0
Siloxane	14.855	0.0		395495	0	0.000	1	1.0
Siloxane	15.405	0.0		403809	0	0.000	1	1.0

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 10 09:42:36 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

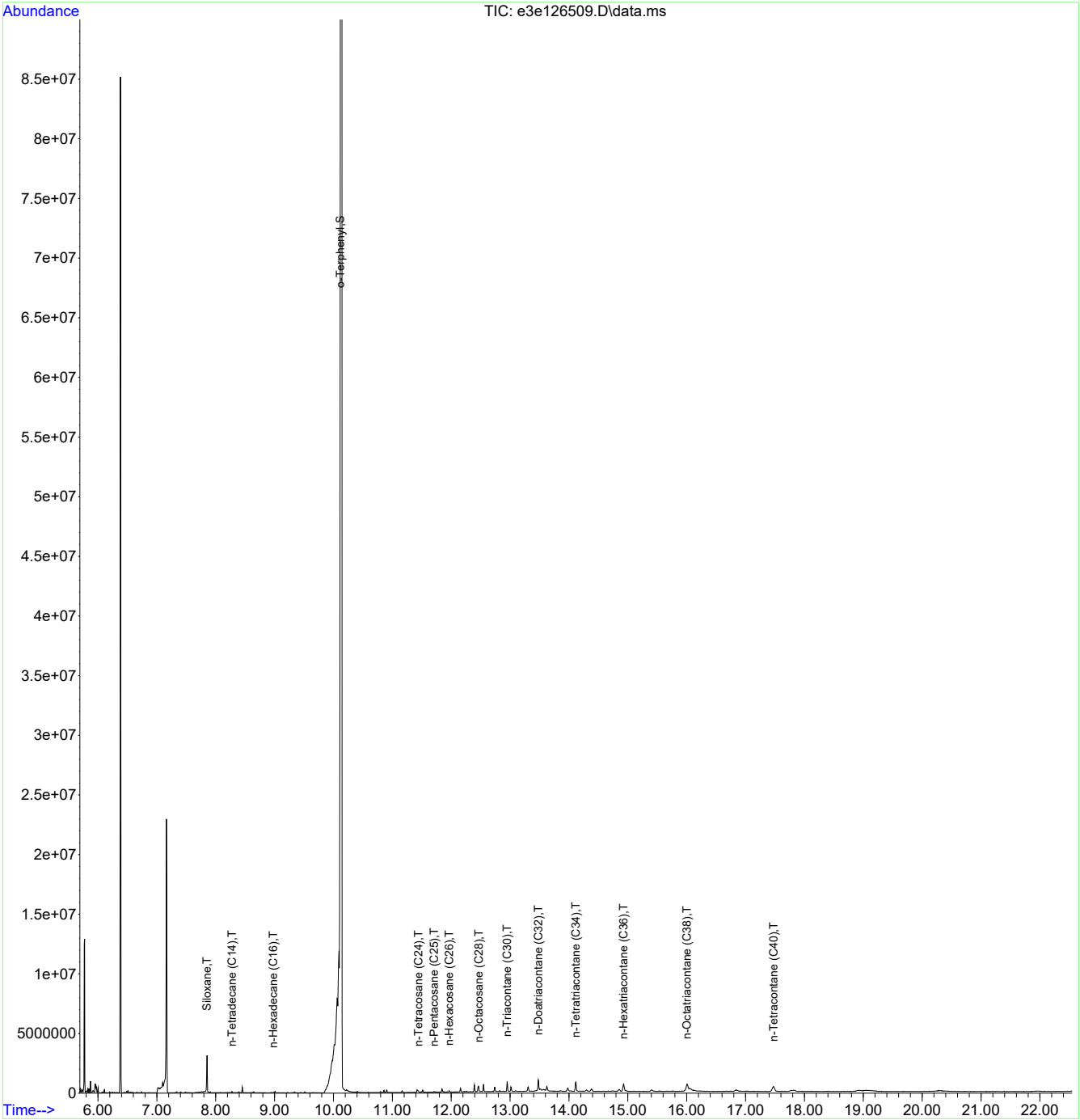
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	10.115	230	30777259m	30777259.00		0.00
Target Compounds						Qvalue
34) n-Tetradecane (C14)	8.275	57	12855	12855.00	#	47
35) n-Hexadecane (C16)	8.976	57	7231	7231.00	#	1
41) n-Tetracosane (C24)	11.442	57	14190	14190.00	#	82
42) n-Pentacosane (C25)	11.709	57	12380	12380.00	#	73
43) n-Hexacosane (C26)	11.966	57	21592	21592.00	#	75
45) n-Octacosane (C28)	12.469	57	65507	65507.00	#	76
47) n-Triacontane (C30)	12.950	57	133301m	133301.00		
48) n-Doatriacontane (C32)	13.480	57	171609m	171609.00		
49) n-Tetratriacontane (C34)	14.116	57	189553m	189553.00		
50) n-Hexatriacontane (C36)	14.929	57	223499m	223499.00		
51) n-Octatriacontane (C38)	16.004	57	201566m	201566.00		
52) n-Tetracontane (C40)	17.475	57	239871m	239871.00		
53) Siloxane	7.853	429	320829m	320829.00		

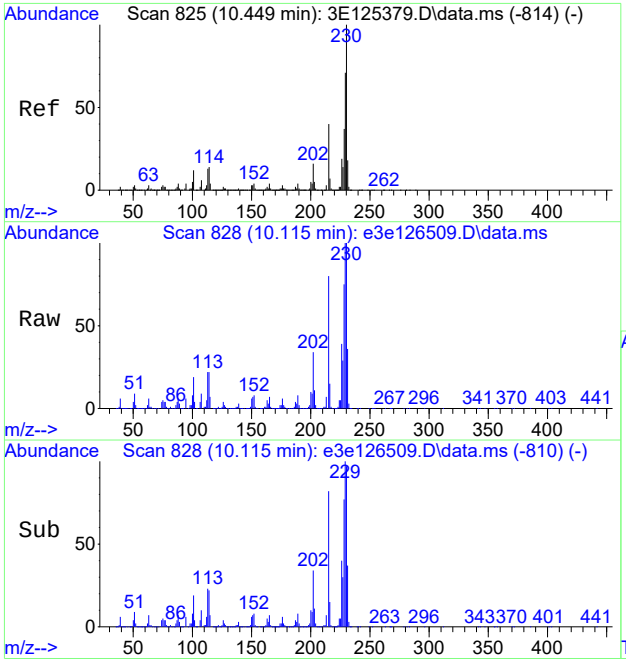
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\Users(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 10 09:42:36 2025
Quant Method : C:\Users(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

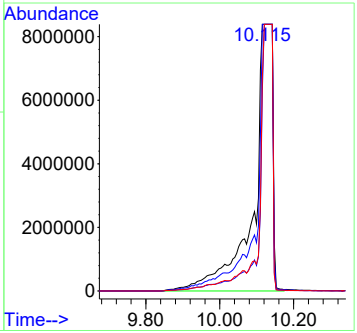


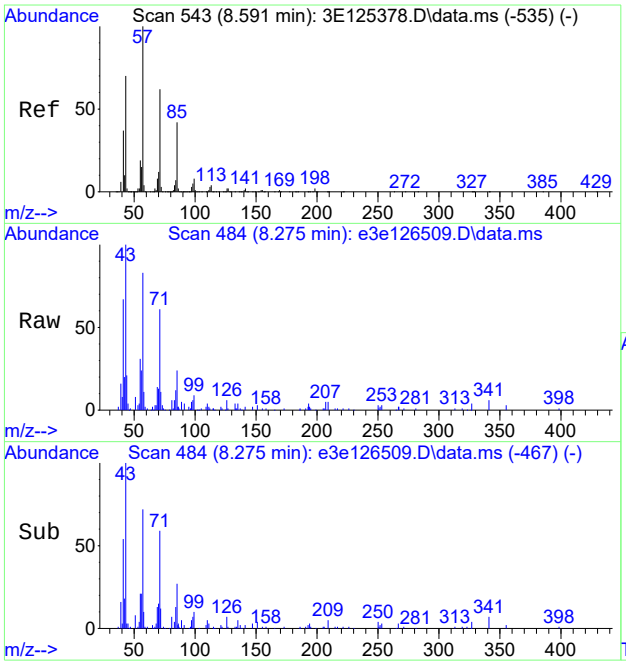


#26
o-Terphenyl
Concen: 30777259.00 m
RT: 10.115 min Scan# 828
Delta R.T. -0.005 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion:230 Resp:30777259

Ion	Ratio	Lower	Upper
230	100		
229	0.0	43.0	83.0#
228	0.0	27.3	67.3#
215	0.0	30.0	70.0#

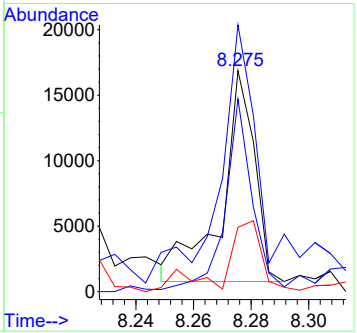


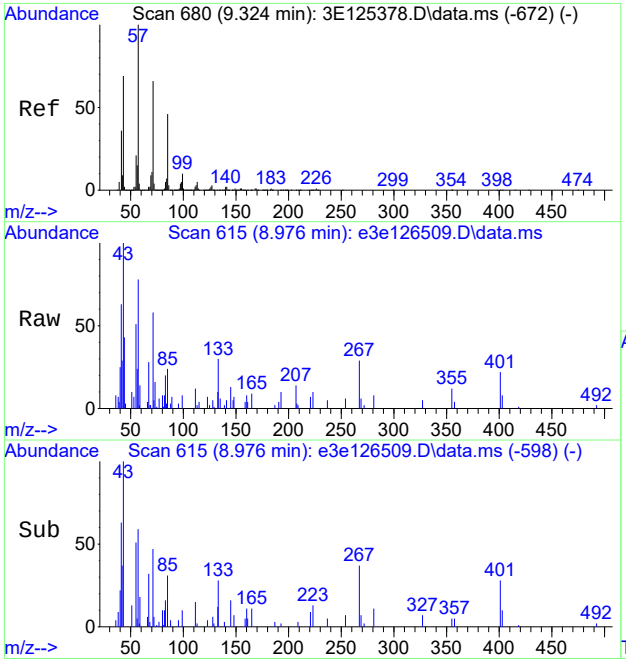


#34
n-Tetradecane (C14)
Concen: 12855.00
RT: 8.275 min Scan# 484
Delta R.T. -0.011 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 12855

Ion	Ratio	Lower	Upper
57	100		
43	160.3	57.6	86.4#
71	72.8	48.6	73.0
85	30.5	32.5	48.7#

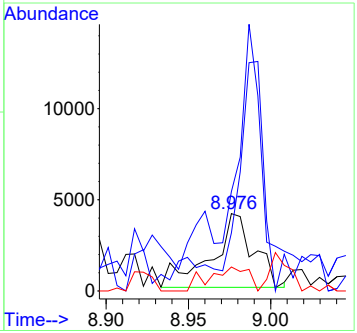


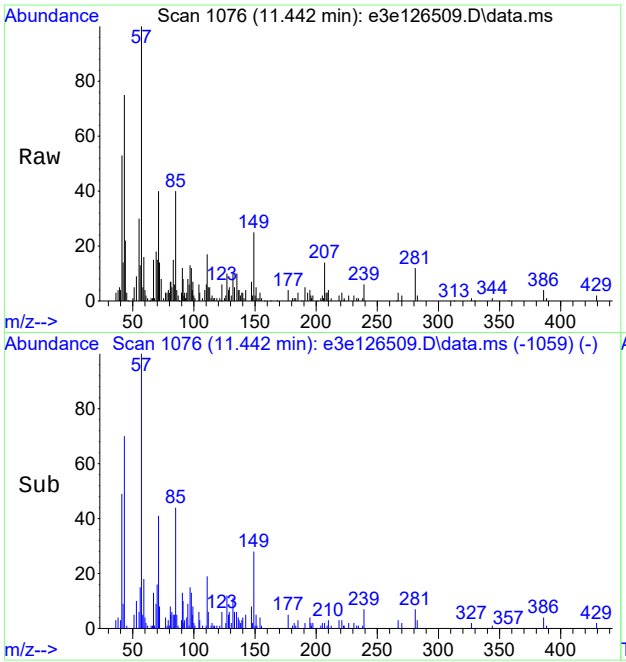


#35
n-Hexadecane (C16)
Concen: 7231.00
RT: 8.976 min Scan# 615
Delta R.T. -0.011 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 7231

Ion	Ratio	Lower	Upper
57	100		
43	203.7	54.8	82.2#
71	185.5	52.3	78.5#
85	30.1	36.8	55.2#

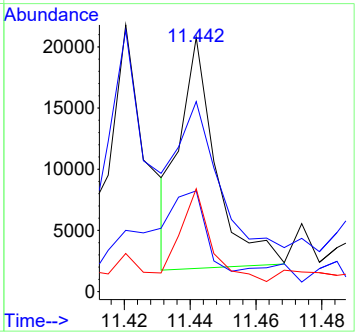


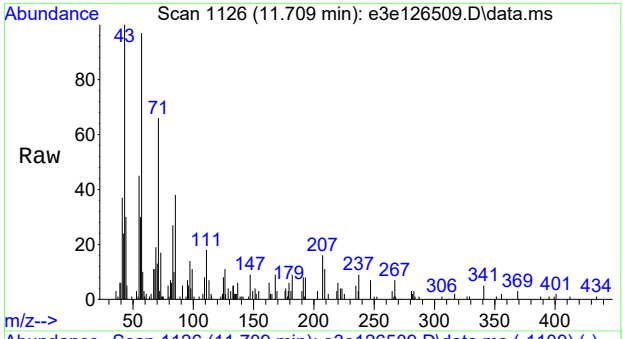


#41
n-Tetracosane (C24)
Concen: 14190.00
RT: 11.442 min Scan# 1076
Delta R.T. -0.011 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 14190

Ion	Ratio	Lower	Upper
57	100		
43	78.5	50.7	76.1#
71	84.0	57.8	86.8
85	38.9	44.2	66.2#

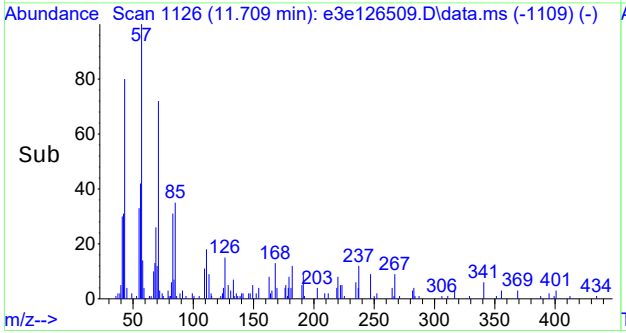


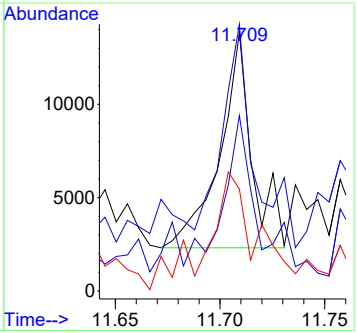


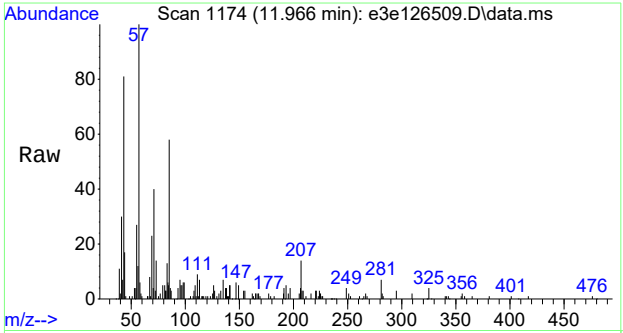
#42
n-Pentacosane (C25)
Concen: 12380.00
RT: 11.709 min Scan# 1126
Delta R.T. -0.011 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 12380

Ion	Ratio	Lower	Upper
57	100		
43	104.0	63.9	95.9#
71	68.6	56.4	84.6
85	84.7	34.0	51.0#



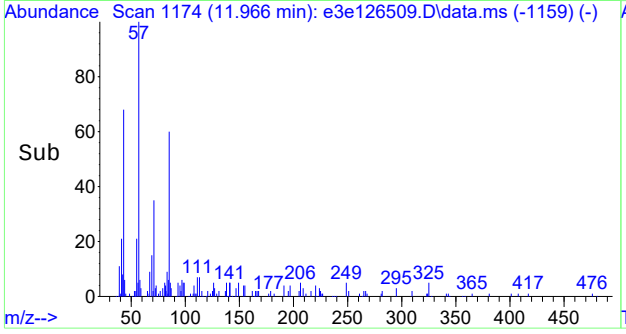


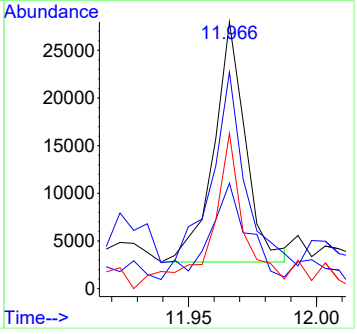


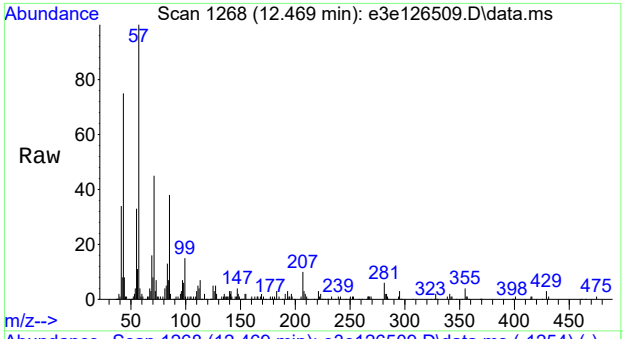
#43
n-Hexacosane (C26)
Concen: 21592.00
RT: 11.966 min Scan# 1174
Delta R.T. -0.021 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 21592

Ion	Ratio	Lower	Upper
57	100		
43	84.6	50.5	75.7#
71	49.1	58.6	87.8#
85	68.3	45.3	67.9#



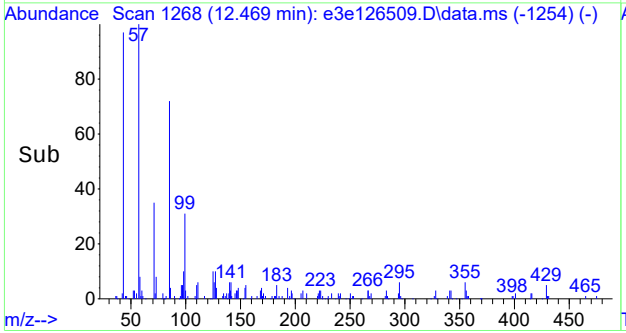


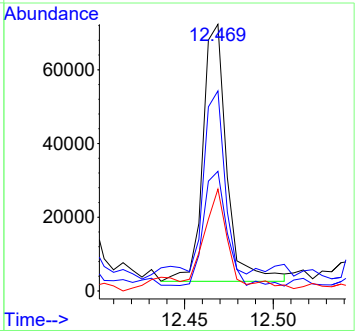


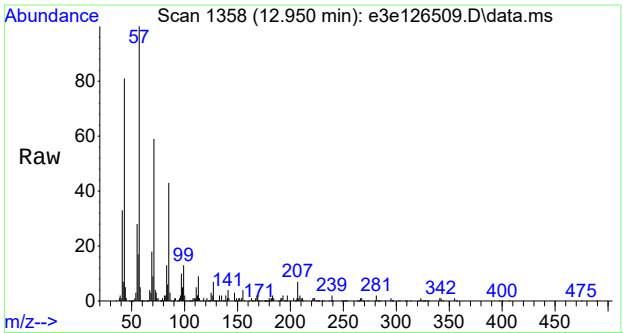
#45
n-Octacosane (C28)
Concen: 65507.00
RT: 12.469 min Scan# 1268
Delta R.T. -0.027 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 65507

Ion	Ratio	Lower	Upper
57	100		
43	71.1	48.6	73.0
71	44.3	58.3	87.5#
85	40.2	45.0	67.6#



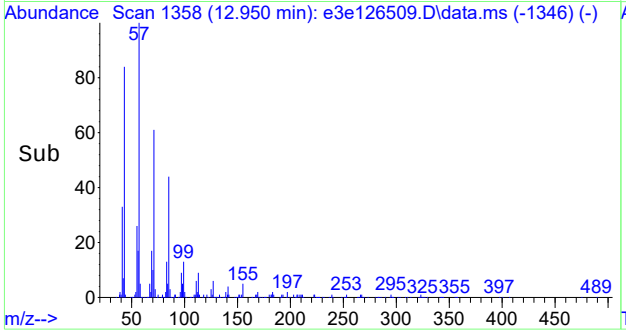


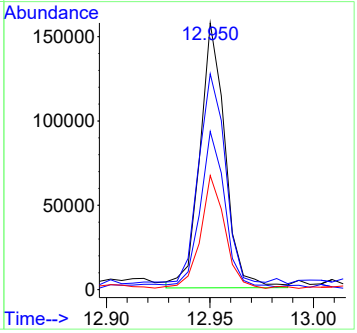


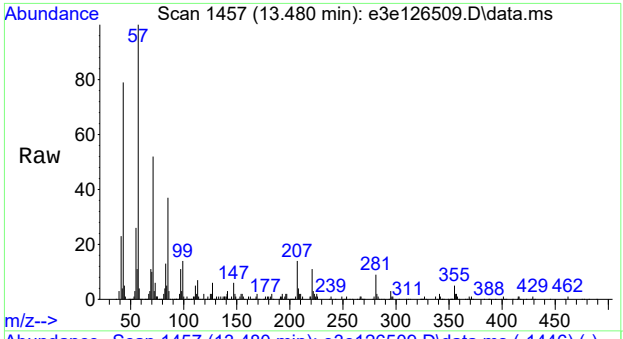
#47
n-Triacontane (C30)
Concen: 133301.00 m
RT: 12.950 min Scan# 1358
Delta R.T. -0.037 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 133301

Ion	Ratio	Lower	Upper
57	100		
43	2.8	47.7	71.5#
71	1.0	58.2	87.4#
85	4.5	45.5	68.3#



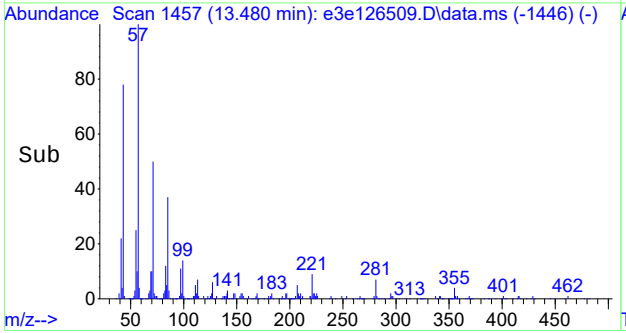


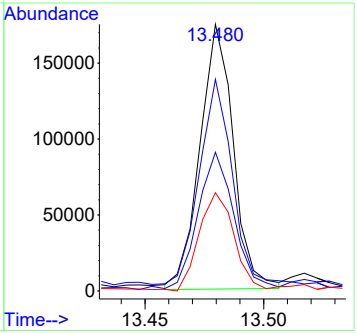


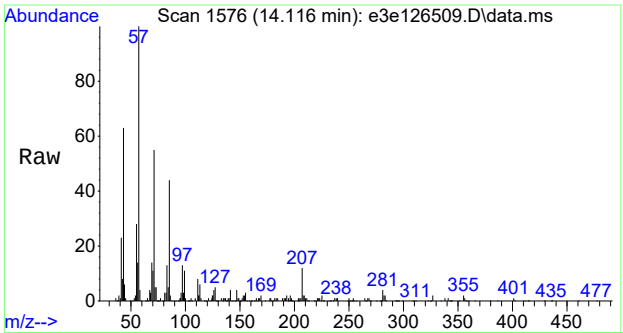
#48
n-Doatriacontane (C32)
Concen: 171609.00 m
RT: 13.480 min Scan# 1457
Delta R.T. -0.043 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 171609

Ion	Ratio	Lower	Upper
57	100		
43	0.0	46.9	70.3#
71	3.8	57.4	86.0#
85	2.1	44.5	66.7#



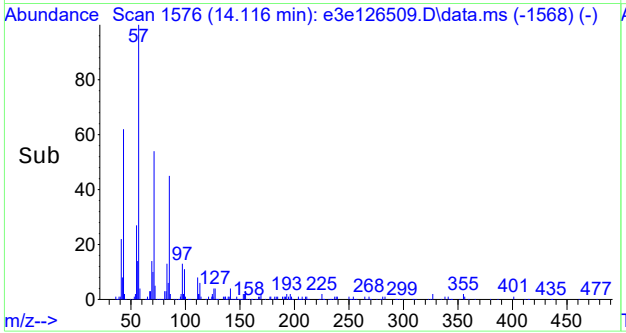


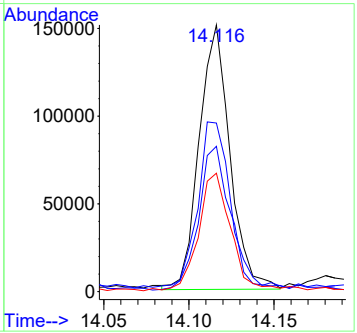


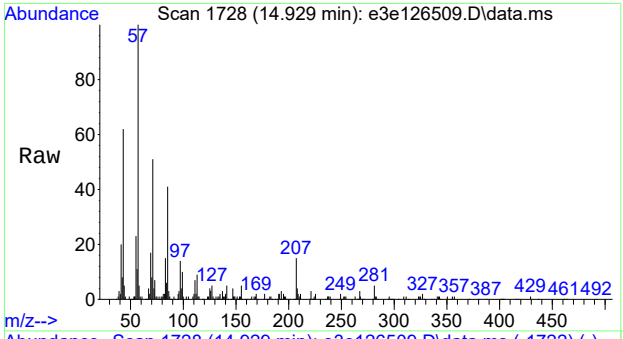
#49
n-Tetratriacontane (C34)
Concen: 189553.00 m
RT: 14.116 min Scan# 1576
Delta R.T. -0.059 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 189553

Ion	Ratio	Lower	Upper
57	100		
43	2.4	45.9	68.9#
71	0.0	56.8	85.2#
85	1.4	43.7	65.5#



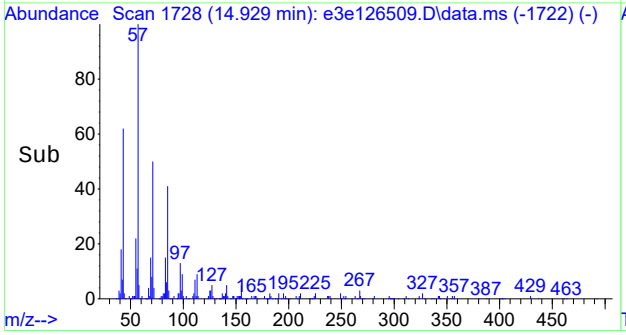


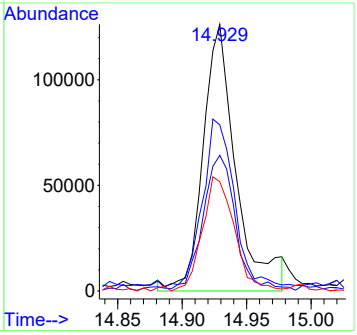


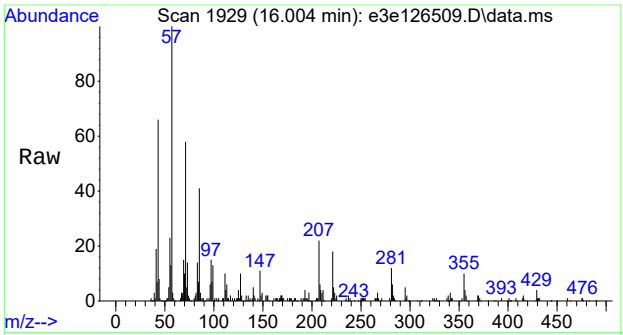
#50
n-Hexatriacontane (C36)
Concen: 223499.00 m
RT: 14.929 min Scan# 1728
Delta R.T. -0.070 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 223499

Ion	Ratio	Lower	Upper
57	100		
43	0.5	45.0	67.6#
71	0.5	56.8	85.2#
85	0.0	43.5	65.3#



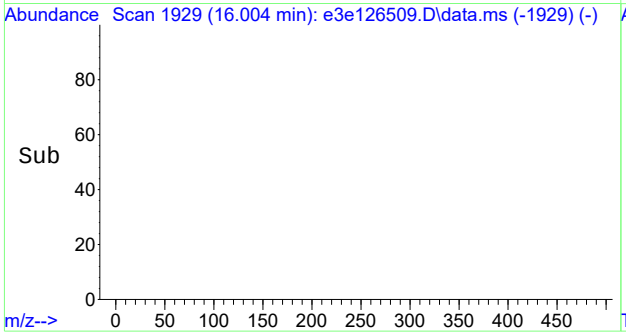


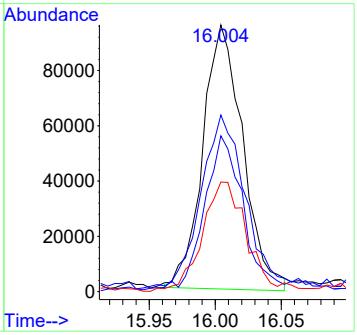


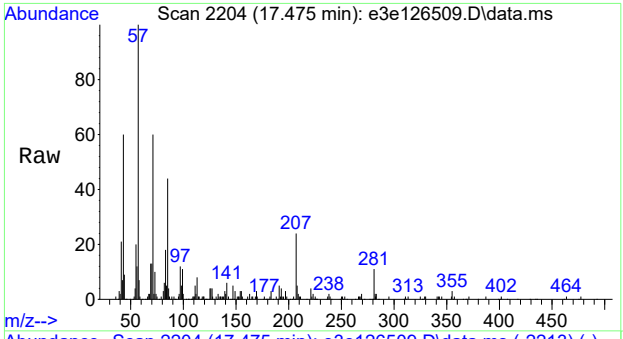
#51
n-Octatriacontane (C38)
Concen: 201566.00 m
RT: 16.004 min Scan# 1929
Delta R.T. -0.102 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 201566

Ion	Ratio	Lower	Upper
57	100		
43	1.3	44.0	66.0#
71	0.0	56.6	85.0#
85	2.4	43.1	64.7#



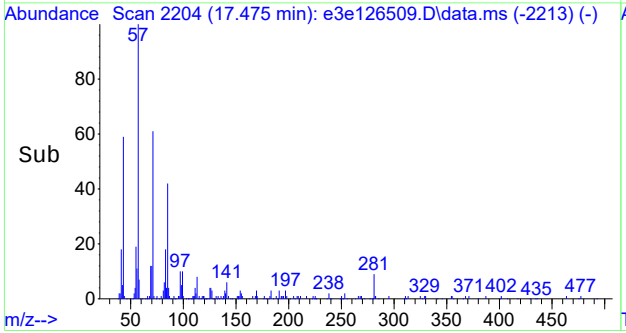


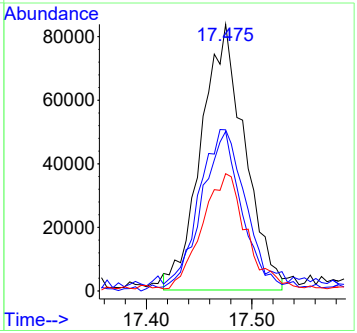


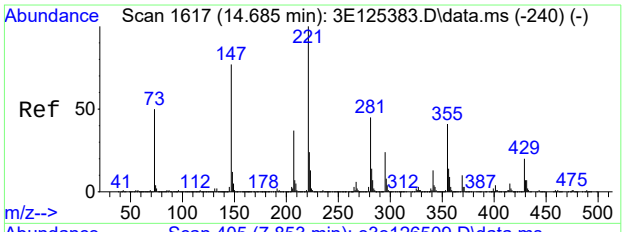
#52
n-Tetracontane (C40)
Concen: 239871.00 m
RT: 17.475 min Scan# 2204
Delta R.T. -0.150 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion: 57 Resp: 239871

Ion	Ratio	Lower	Upper
57	100		
43	0.7	42.4	63.6#
71	0.8	56.5	84.7#
85	0.6	43.1	64.7#



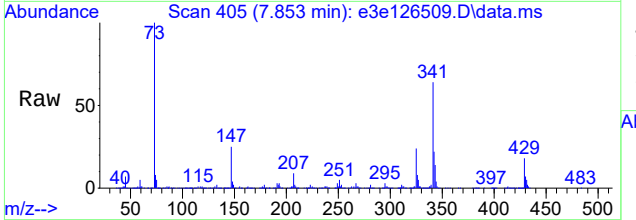


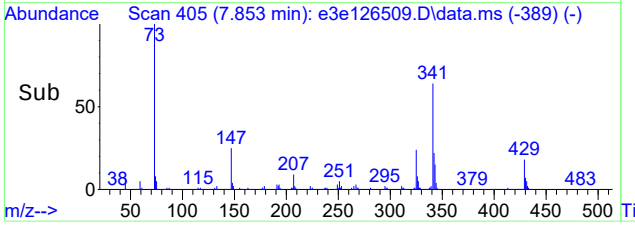


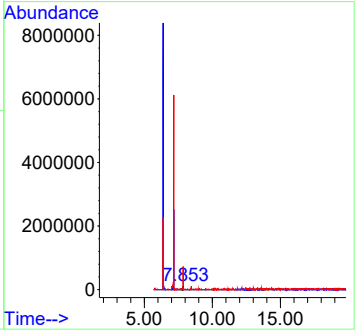
#53
Siloxane
Concen: 320829.00 m
RT: 7.853 min Scan# 405
Delta R.T. -0.016 min
Lab File: e3e126509.D
Acq: 9 Jan 2025 3:43 pm

Tgt Ion:429 Resp: 320829

Ion	Ratio	Lower	Upper
429	100		
355	0.0	0.0	20.0
281	2.6	0.0	20.0
73	184.3	0.0	20.0#







LSC Area Percent Report

Data Path : C:\Users(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126509.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.548	157	161	165	rVB2	59975	76642	0.02%	0.017%
2	6.580	165	167	171	rVB2	40507	31611	0.01%	0.007%
3	6.660	178	182	187	rBV6	42968	39799	0.01%	0.009%
4	6.740	194	197	203	rVB	84201	76847	0.02%	0.017%
5	6.799	203	208	211	rBV7	21532	28388	0.01%	0.006%
6	6.863	213	220	227	rVB7	23550	54505	0.01%	0.012%
7	6.928	227	232	234	rBV5	11893	16566	0.00%	0.004%
8	6.949	234	236	240	rVB5	19087	21607	0.01%	0.005%
9	7.019	240	249	253	rBV5	446695	855562	0.21%	0.189%
10	7.099	257	264	266	rVV4	860085	1657670	0.40%	0.367%
11	7.163	267	276	283	rVV	22945724	19677588	4.80%	4.352%
12	7.243	289	291	295	rBV5	13266	12743	0.00%	0.003%
13	7.281	295	298	300	rBV4	10303	12740	0.00%	0.003%
14	7.334	300	308	313	rVV	88050	105779	0.03%	0.023%
15	7.409	315	322	328	rVB2	80486	96540	0.02%	0.021%
16	7.484	332	336	342	rVB5	69781	87219	0.02%	0.019%
17	7.527	342	344	346	rVB3	17702	14332	0.00%	0.003%
18	7.559	346	350	355	rBV8	22264	30504	0.01%	0.007%
19	7.671	361	371	373	rBV10	43607	99003	0.02%	0.022%
20	7.714	376	379	381	rVV4	61193	76484	0.02%	0.017%
21	7.762	384	388	392	rVV7	93254	193055	0.05%	0.043%
22	7.805	392	396	399	rVV6	108957	225605	0.06%	0.050%
23	7.853	399	405	411	rVV	3142343	2472448	0.60%	0.547%
24	7.906	412	415	420	rVB3	82758	68916	0.02%	0.015%
25	8.019	434	436	439	rVB4	17257	13098	0.00%	0.003%
26	8.072	444	446	453	rVB6	24727	30097	0.01%	0.007%
27	8.131	453	457	462	rBV8	12837	25638	0.01%	0.006%
28	8.174	462	465	466	rBV3	14911	13345	0.00%	0.003%
29	8.206	469	471	473	rVV3	21249	17456	0.00%	0.004%
30	8.227	473	475	478	rVB3	26975	17360	0.00%	0.004%
31	8.275	478	484	489	rBV	102482	83431	0.02%	0.018%
32	8.356	495	499	500	rBV3	12698	14731	0.00%	0.003%
33	8.393	502	506	510	rVV4	78602	99211	0.02%	0.022%
34	8.452	513	517	521	rVV	462291	320758	0.08%	0.071%
35	8.591	539	543	548	rVV8	20924	26259	0.01%	0.006%
36	8.645	548	553	560	rVB7	86901	121729	0.03%	0.027%
37	8.709	560	565	568	rBV7	13927	19122	0.00%	0.004%
38	8.751	568	573	574	rBV5	12797	14464	0.00%	0.003%
39	8.891	595	599	602	rVB5	12080	13102	0.00%	0.003%
40	8.944	602	609	614	rBV9	25920	54613	0.01%	0.012%

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	9.008	614	621	625	rVV3	123501	156285	0.04%	0.035%
42	9.035	625	626	630	rVV4	14166	12985	0.00%	0.003%
43	9.137	640	645	647	rBV5	12535	18008	0.00%	0.004%
44	9.222	651	661	667	rBV5	31155	51504	0.01%	0.011%
45	9.297	671	675	677	rBV5	18460	13570	0.00%	0.003%
46	9.340	677	683	690	rVB3	77696	106458	0.03%	0.024%
47	9.393	690	693	697	rBV6	9146	15881	0.00%	0.004%
48	9.447	697	703	708	rVB8	41929	56304	0.01%	0.012%
49	9.511	708	715	719	rBV5	85313	103956	0.03%	0.023%
50	9.538	719	720	726	rVB6	15706	17815	0.00%	0.004%
51	9.650	736	741	744	rBV4	18894	17752	0.00%	0.004%
52	9.741	749	758	760	rBV10	14647	30069	0.01%	0.007%
53	10.137	776	832	845	rBV4	231909816	409706835	100.00%	90.623%
54	10.222	845	848	858	rVB7	167905	335298	0.08%	0.074%
55	10.367	873	875	878	rVB4	33495	28078	0.01%	0.006%
56	10.404	878	882	888	rVB4	95278	94969	0.02%	0.021%
57	10.591	914	917	919	rVB4	38897	28144	0.01%	0.006%
58	10.800	950	956	960	rVB4	103038	107258	0.03%	0.024%
59	10.859	960	967	970	rBV2	199043	199942	0.05%	0.044%
60	10.907	970	976	982	rVB	219431	226545	0.06%	0.050%
61	10.960	982	986	989	rBV6	25601	31553	0.01%	0.007%
62	11.057	1000	1004	1007	rBV6	24808	30109	0.01%	0.007%
63	11.089	1007	1010	1013	rVB5	17385	17831	0.00%	0.004%
64	11.132	1014	1018	1019	rBV3	13626	15467	0.00%	0.003%
65	11.164	1021	1024	1030	rVB3	142124	150965	0.04%	0.033%
66	11.420	1068	1072	1081	rBV4	211552	335609	0.08%	0.074%
67	11.517	1083	1090	1094	rVV2	187210	211234	0.05%	0.047%
68	11.613	1105	1108	1113	rBV7	24333	45000	0.01%	0.010%
69	11.709	1122	1126	1128	rBV4	60087	57181	0.01%	0.013%
70	11.843	1148	1151	1159	rBV3	264140	270473	0.07%	0.060%
71	11.923	1164	1166	1169	rVV4	25526	17669	0.00%	0.004%
72	11.966	1171	1174	1179	rVB3	113354	96122	0.02%	0.021%
73	12.052	1188	1190	1193	rVB4	25567	19375	0.00%	0.004%
74	12.078	1193	1195	1199	rBV4	31066	38456	0.01%	0.009%
75	12.159	1205	1210	1214	rVB2	309706	284765	0.07%	0.063%
76	12.217	1218	1221	1224	rVV5	46651	44903	0.01%	0.010%
77	12.260	1226	1229	1232	rVB3	54490	41171	0.01%	0.009%
78	12.394	1250	1254	1258	rBV2	561531	427496	0.10%	0.095%
79	12.463	1262	1267	1272	rBV2	461633	611103	0.15%	0.135%
80	12.549	1280	1283	1287	rVB	616093	456733	0.11%	0.101%
81	12.742	1315	1319	1325	rBV	371193	391666	0.10%	0.087%
82	12.822	1331	1334	1338	rBV5	80216	68523	0.02%	0.015%
83	12.950	1354	1358	1363	rBV	820251	688065	0.17%	0.152%
84	13.014	1366	1370	1378	rVB	391777	414978	0.10%	0.092%
85	13.089	1382	1384	1393	rVB10	57514	96718	0.02%	0.021%

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LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	13.309	1421	1425	1430	rVB4	371790	456068	0.11%	0.101%
87	13.480	1452	1457	1461	rBV	887417	963265	0.24%	0.213%
88	13.624	1480	1484	1493	rVB	390608	556200	0.14%	0.123%
89	13.849	1525	1526	1533	rVB7	47281	69247	0.02%	0.015%
90	13.982	1546	1551	1557	rBV3	255130	377805	0.09%	0.084%
91	14.116	1571	1576	1586	rVB	765385	1003519	0.24%	0.222%
92	14.298	1605	1610	1615	rVB7	107376	150737	0.04%	0.033%
93	14.384	1620	1626	1636	rVB5	203903	341901	0.08%	0.076%
94	14.854	1706	1714	1721	rBV8	166216	332239	0.08%	0.073%
95	14.929	1721	1728	1734	rBV2	618999	1037347	0.25%	0.229%
96	15.411	1811	1818	1824	rBV9	104502	232395	0.06%	0.051%
97	16.004	1920	1929	1949	rBV6	572302	1981176	0.48%	0.438%
98	16.839	2077	2085	2096	rBV6	126166	324152	0.08%	0.072%
99	17.475	2194	2204	2218	rVB5	410027	1133020	0.28%	0.251%
100	21.155	2890	2892	2896	rBV5	27200	34744	0.01%	0.008%

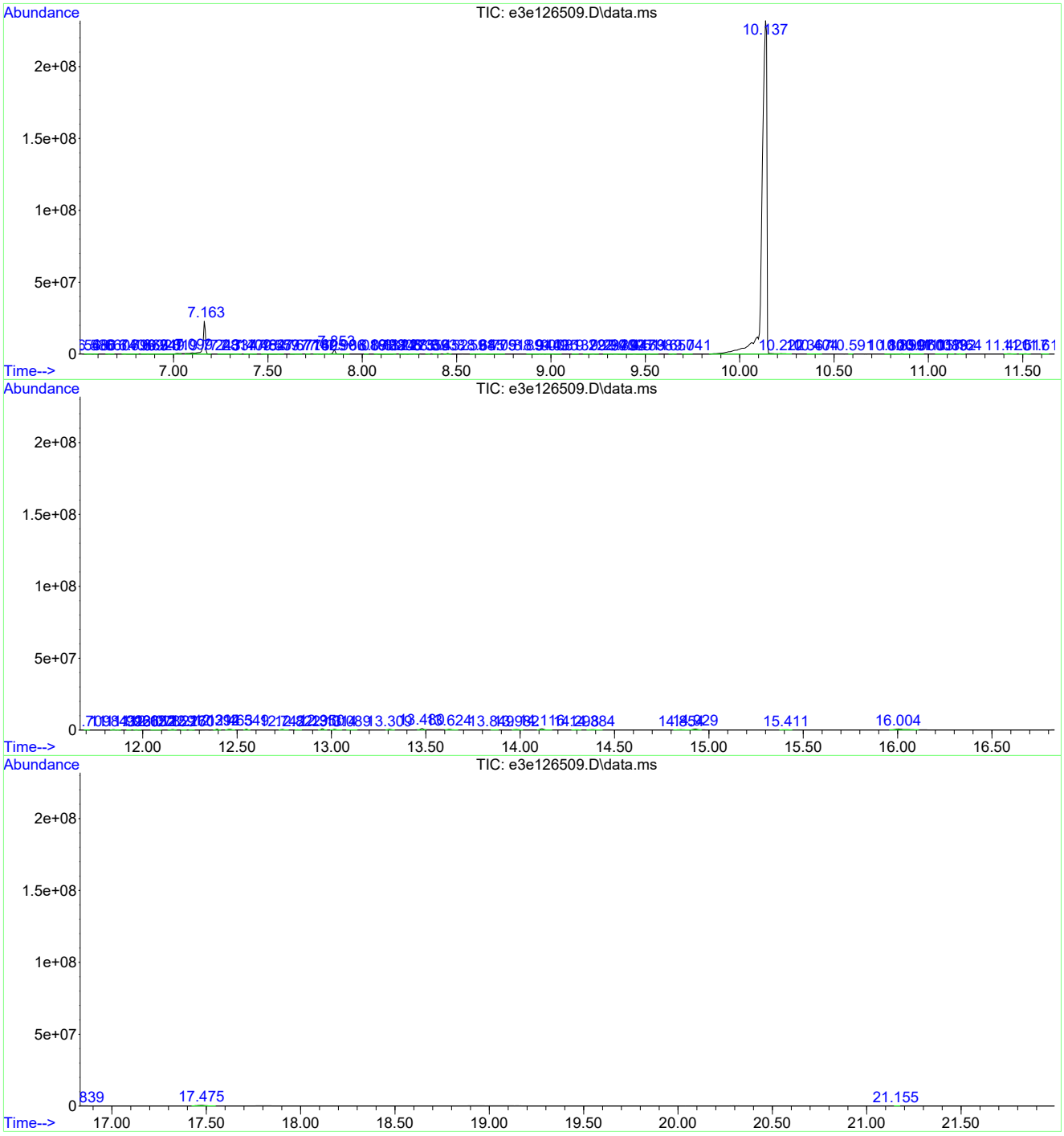
Sum of corrected areas: 452101203

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

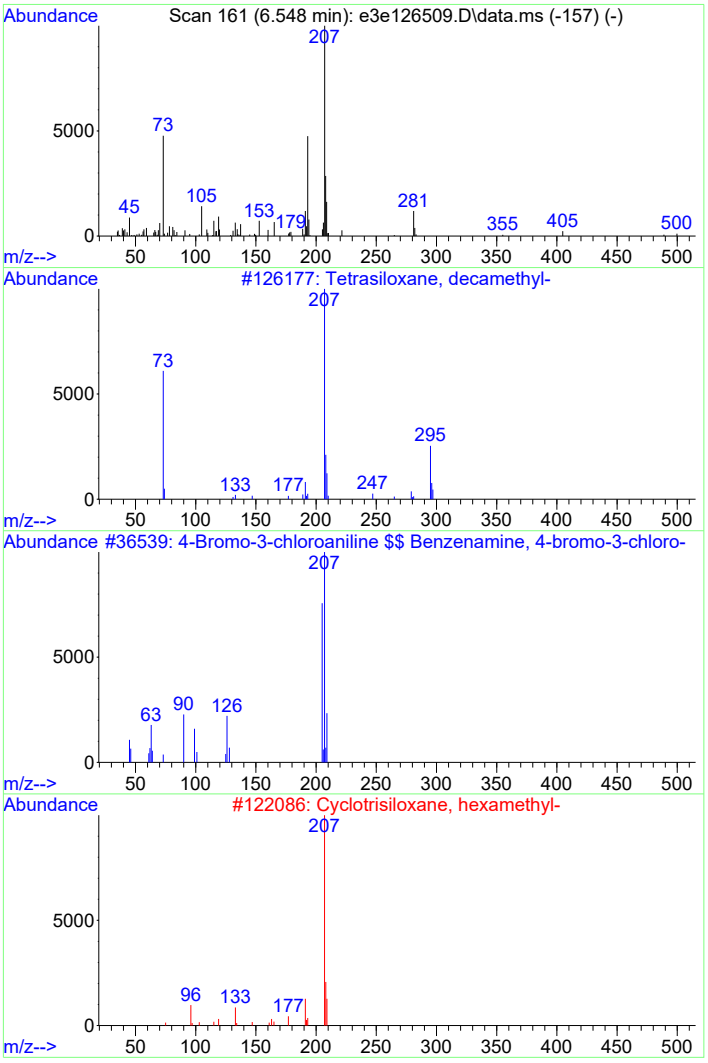
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

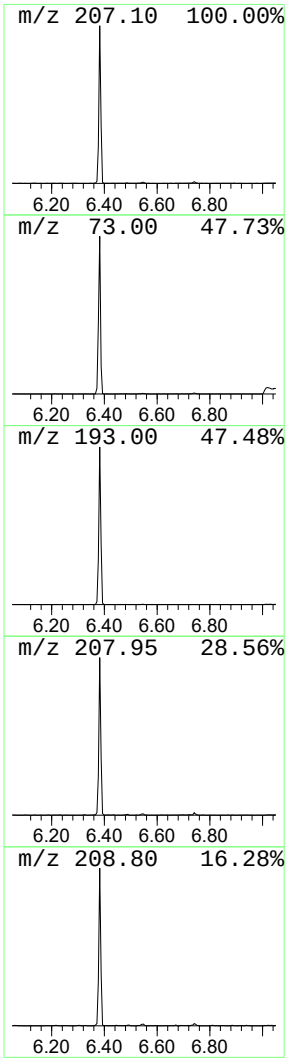
****

Peak Number 1 Siloxane Concentration Rank 37

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.548	0.00	76642	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetrasiloxane, decamethyl-	310	C10H30O3Si4	000141-62-8	40
2	4-Bromo-3-chloroaniline $$ Benze...	205	C6H5BrClN	021402-26-6	37
3	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	33
4	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	28
5	1,3-Bis(trimethylsilyl)benzene	222	C12H22Si2	002060-89-1	28





(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

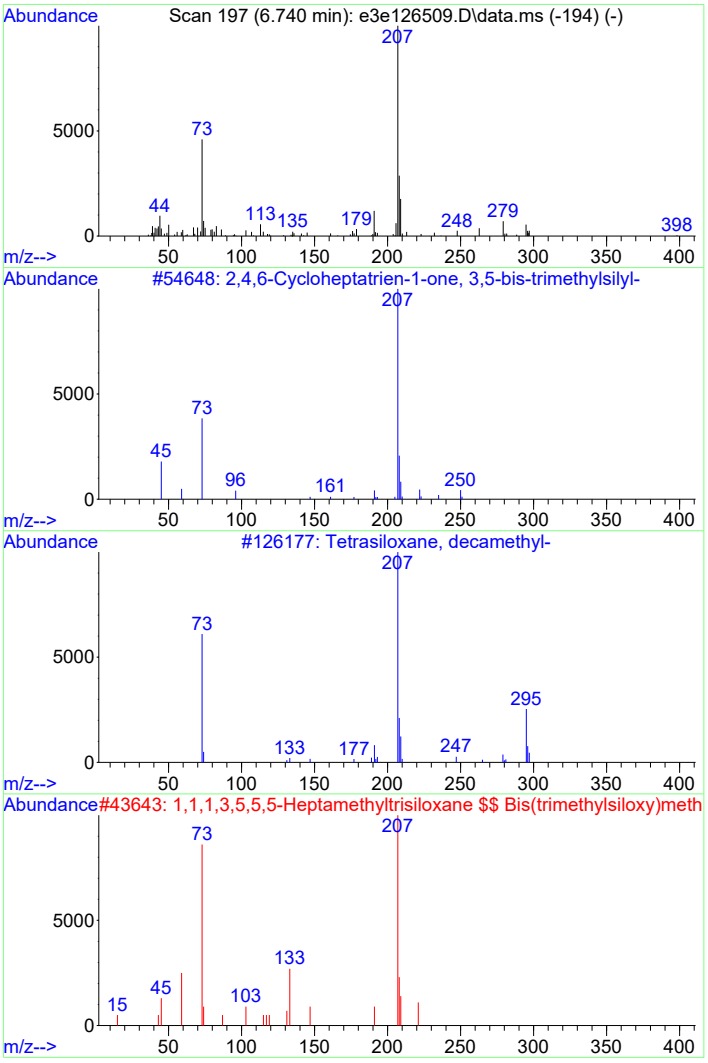
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

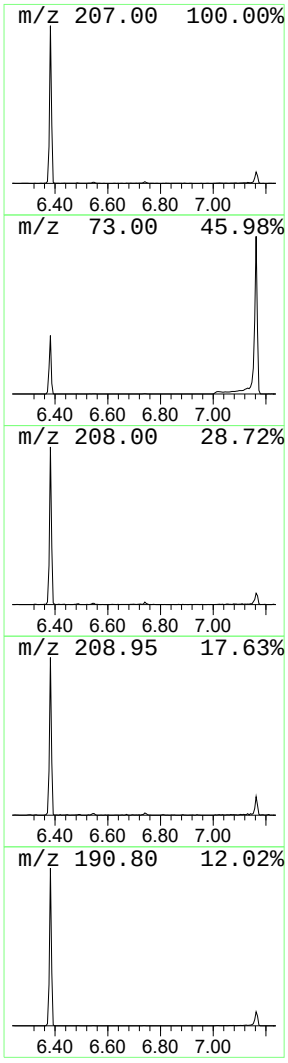
****

Peak Number 4 Siloxane Concentration Rank 36

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.740	0.00	76847	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,4,6-Cycloheptatrien-1-one, 3,5...	250	C13H22OSi2	000000-00-0	59
2	Tetrasiloxane, decamethyl-	310	C10H30O3Si4	000141-62-8	50
3	1,1,1,3,5,5,5-Heptamethyltrisilo...	222	C7H22O2Si3	001873-88-7	50
4	Cyclotrisiloxane, hexamethyl- $$...	222	C6H18O3Si3	000541-05-9	45
5	Cyclotrisiloxane, hexamethyl-	222	C6H18O3Si3	000541-05-9	45





AECOM_e3g_TPHEXT.M Fri Jan 10 11:04:43 2025 6

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

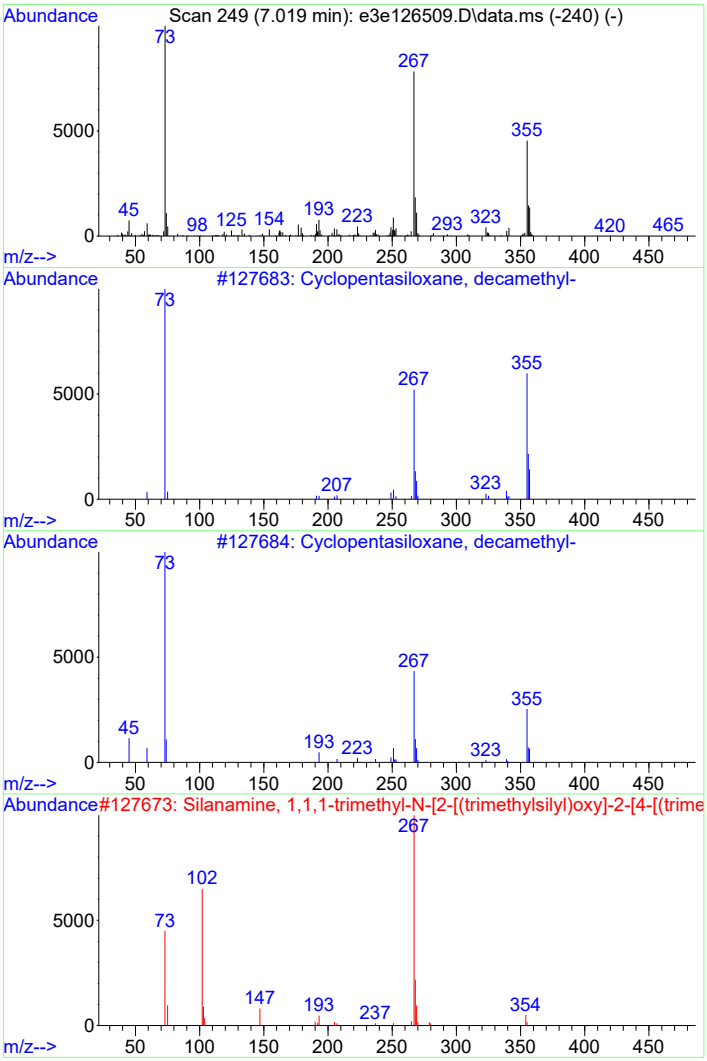
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

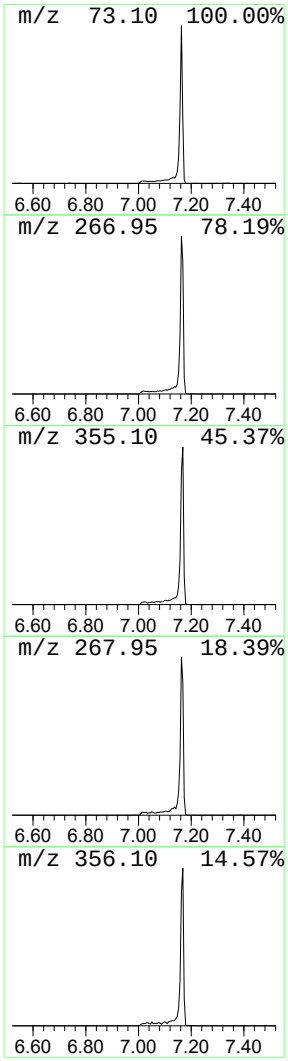
****

Peak Number 9 Siloxane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.019	0.00	855562	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	90
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	80
3	Silanamine, 1,1,1-trimethyl-N-[2...	369	C17H35NO2Si3	068595-60-8	50
4	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	47
5	Benzenemethanol, .alpha.-(aminom...	369	C17H35NO2Si3	056145-08-5	43





AECOM_e3g_TPHEXT.M Fri Jan 10 11:04:45 2025 7

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

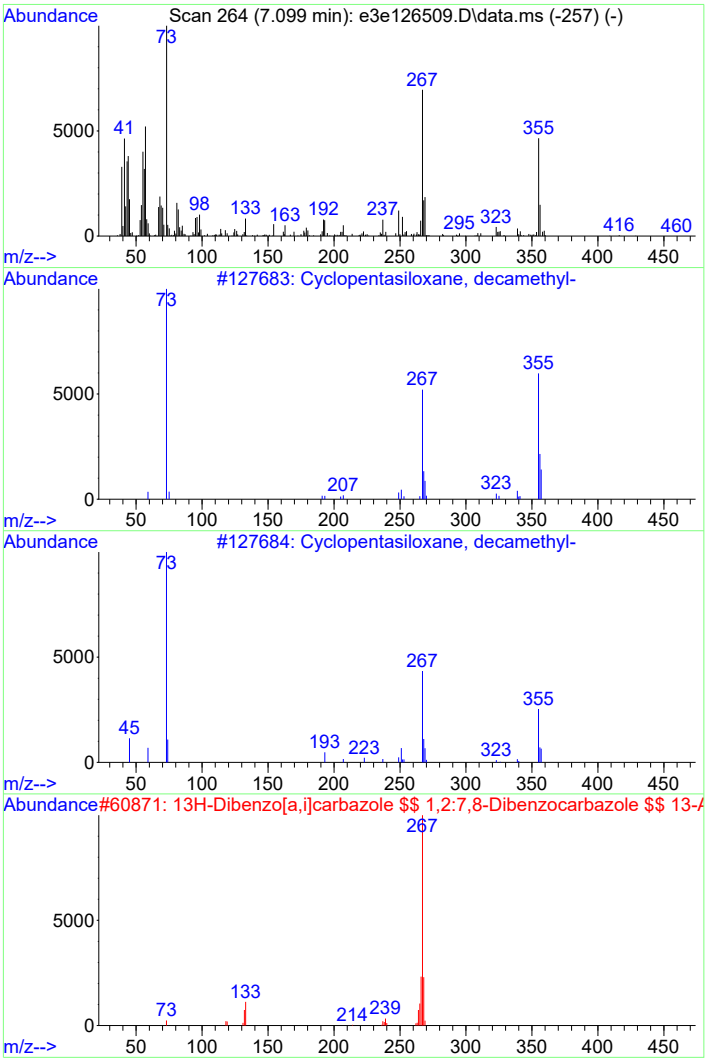
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

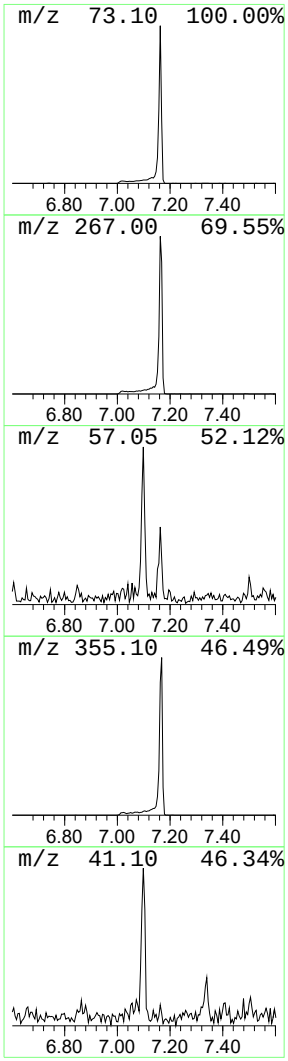
****

Peak Number 10 Siloxane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.099	0.00	1657670	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	64
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	59
3	13H-Dibenzo[a,i]carbazole $$ 1,2...	267	C20H13N	000239-64-5	27
4	Benzeneethanamine, N-butyl-.beta...	353	C18H35NO2Si2	040629-66-1	27
5	Ethanol, (2-(3,4-dihydroxyphenyl...	370	C17H34O3Si3	068595-80-2	25





(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

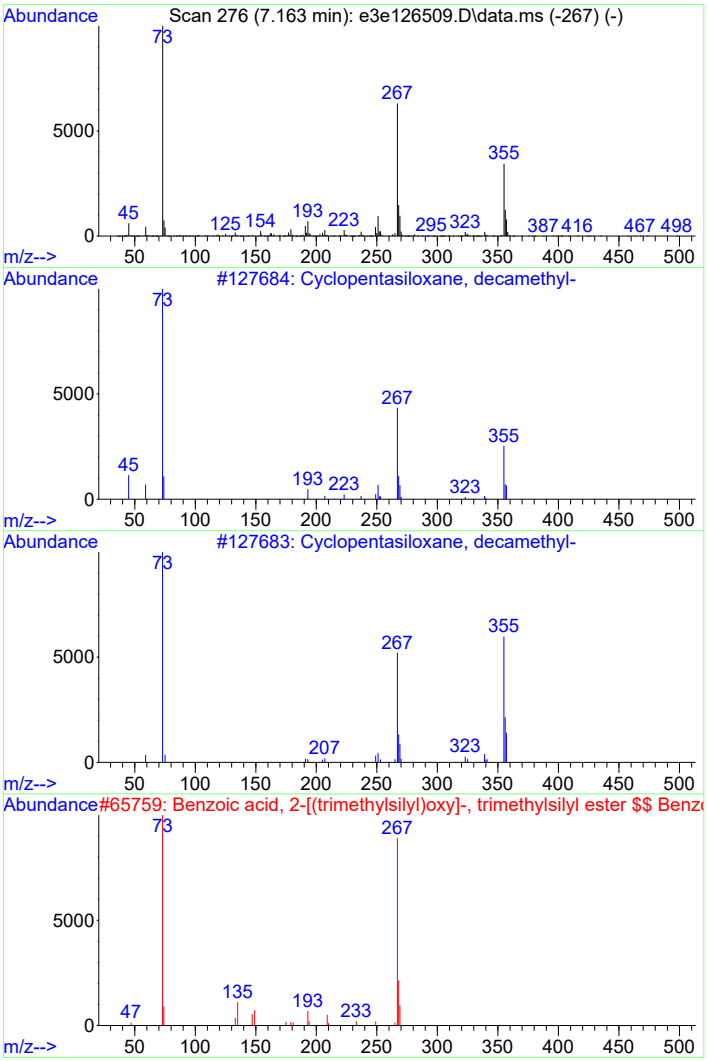
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

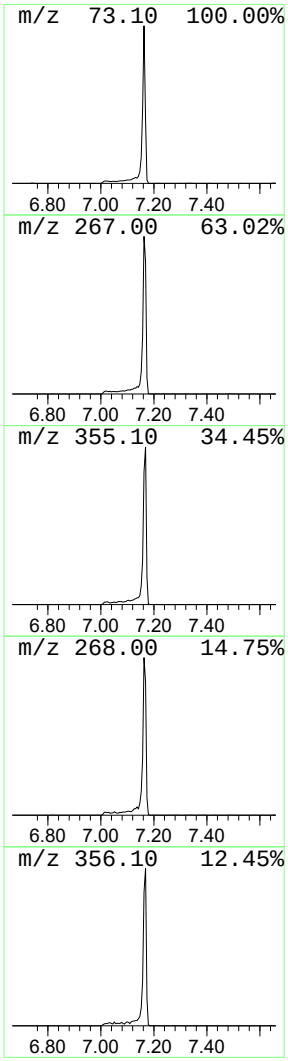
****

Peak Number 11 Siloxane Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.163	0.00	19677600	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	91
2	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	83
3	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	47
4	Benzenemethanol, .alpha.-(aminom...	369	C17H35NO2Si3	056145-08-5	43
5	Silanamine, 1,1,1-trimethyl-N-[2...	369	C17H35NO2Si3	068595-60-8	40





AECOM_e3g_TPHEXT.M Fri Jan 10 11:04:48 2025 9

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

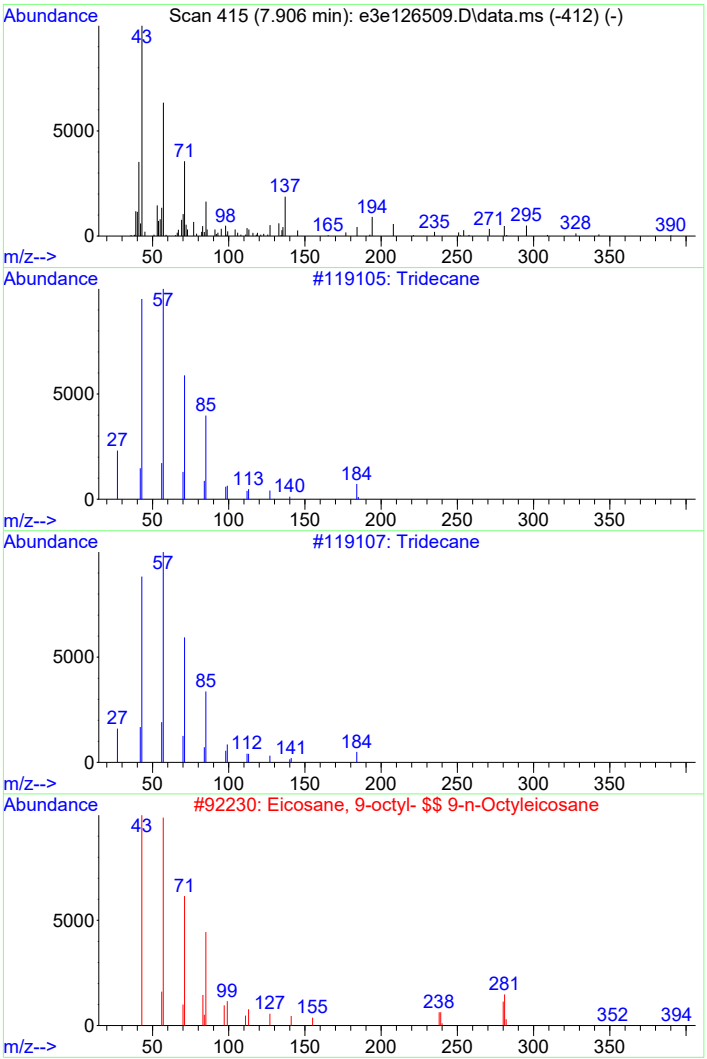
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

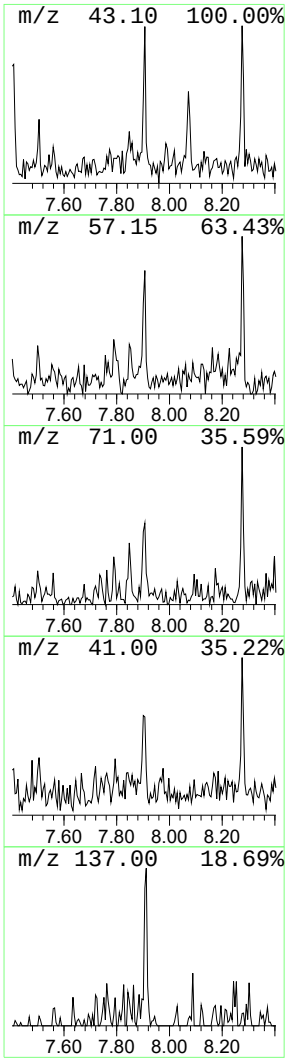
****

Peak Number 22 Alkane Concentration Rank 40

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.906	0.00	68916	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tridecane	184	C13H28	000629-50-5	38
2	Tridecane	184	C13H28	000629-50-5	35
3	Eicosane, 9-octyl- $$ 9-n-Octyle...	394	C28H58	013475-77-9	35
4	Hexadecane, 2,6,10,14-tetramethy...	282	C20H42	000638-36-8	30
5	Hexadecane	226	C16H34	000544-76-3	27





AECOM_e3g_TPHEXT.M Fri Jan 10 11:04:50 2025 10

Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

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Quant Title : 8270C Calibration

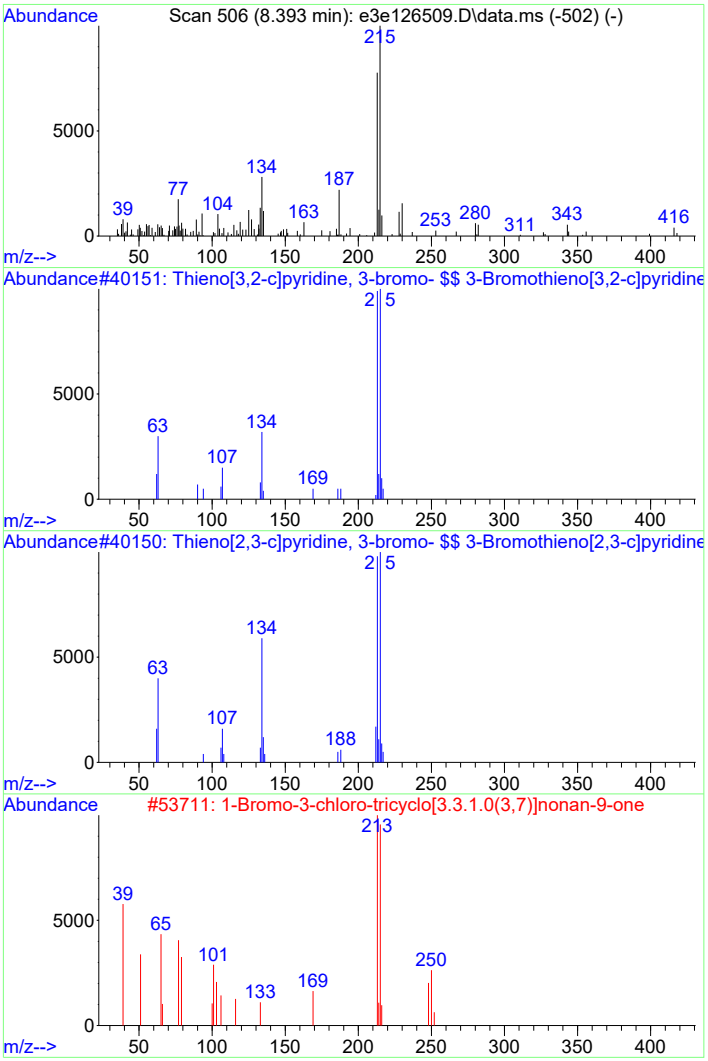
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

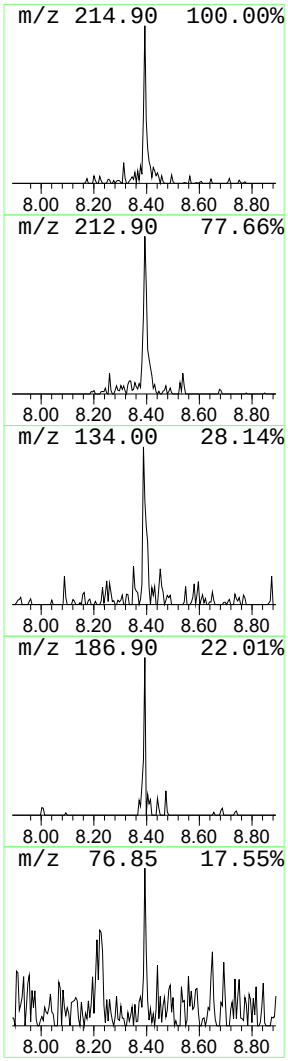
****

Peak Number 29 Thieno[3,2-c]pyridine, 3-br... Concentration Rank 30

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.393	0.00	99211	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Thieno[3,2-c]pyridine, 3-bromo- ...	213	C7H4BrNS	028783-18-8	72
2	Thieno[2,3-c]pyridine, 3-bromo- ...	213	C7H4BrNS	028783-17-7	64
3	1-Bromo-3-chloro-tricyclo[3.3.1....	248	C9H10BrClO	000000-00-0	45
4	2-Bromophenyl isothiocyanate	213	C7H4BrNS	013037-60-0	45
5	Chloroxine	213	C9H5Cl2NO	000773-76-2	37





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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

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Quant Title : 8270C Calibration

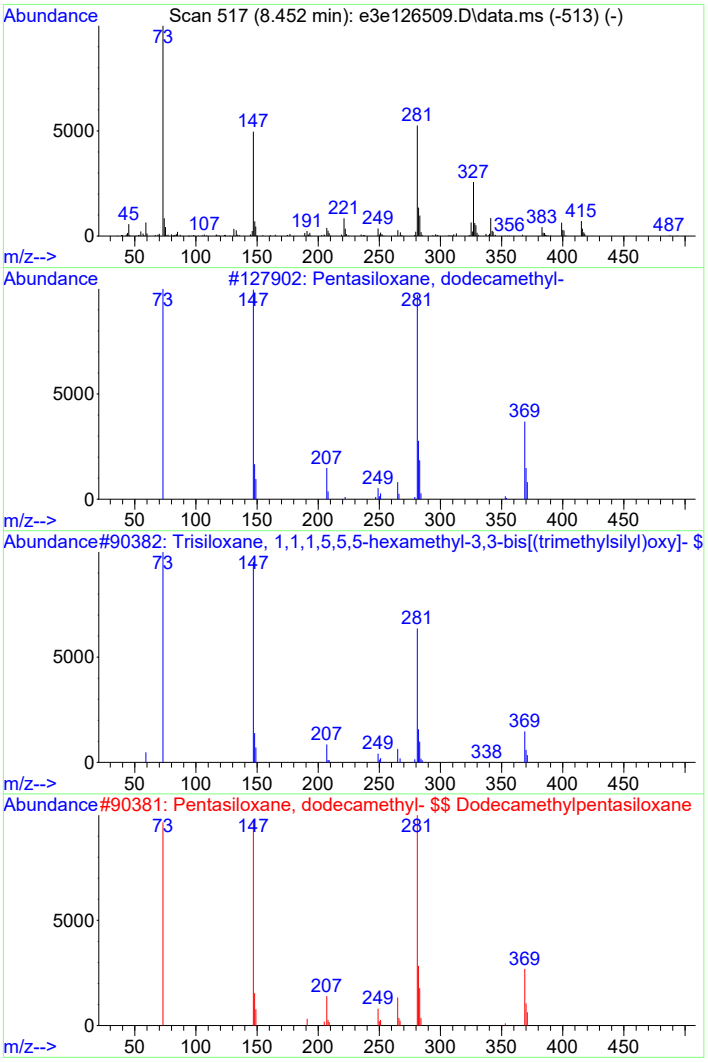
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

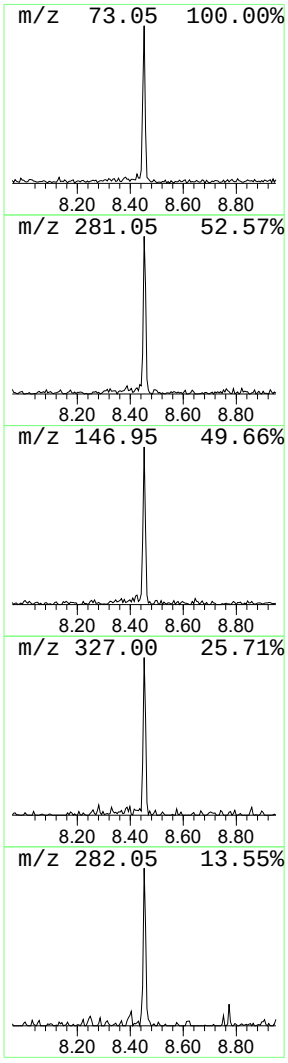
****

Peak Number 30 Siloxane Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.452	0.00	320758	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	50
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	43
3	Pentasiloxane, dodecamethyl- $$ ...	384	C12H36O4Si5	000141-63-9	40
4	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	35
5	Spiro[cyclopropane-1,2'(1'H)-phe...	532	C28H36O10	066584-89-2	35





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Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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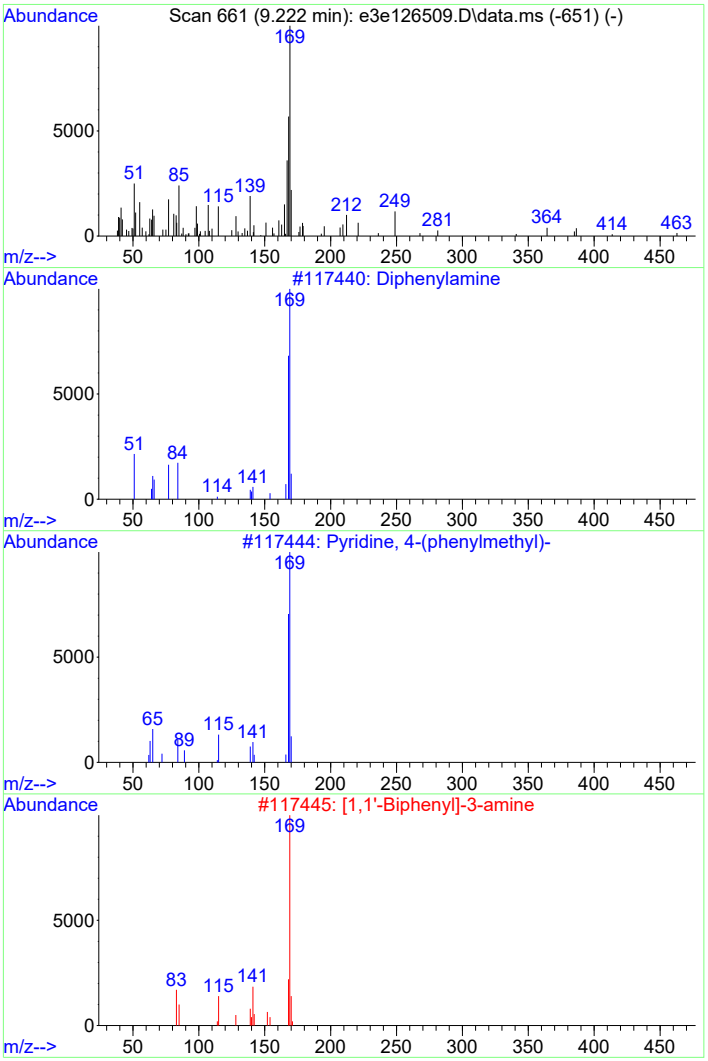
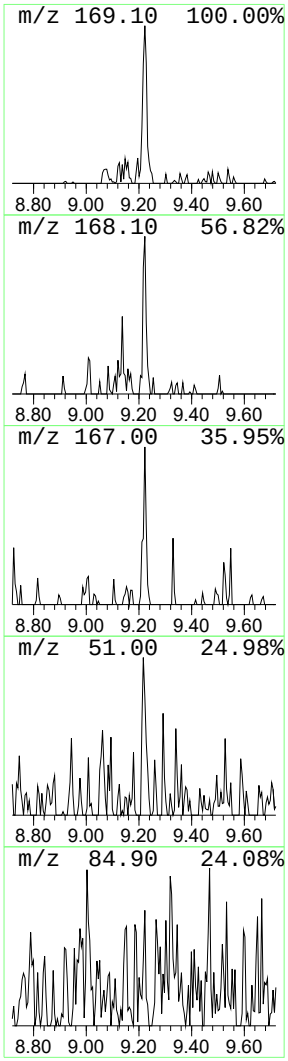
Peak Number 38 Diphenylamine Concentration Rank 44

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.222	0.00	51504	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diphenylamine	169	C12H11N	000122-39-4	49
2	Pyridine, 4-(phenylmethyl)-	169	C12H11N	002116-65-6	47
3	[1,1'-Biphenyl]-3-amine	169	C12H11N	002243-47-2	43
4	Hydrazine, 1,1-diphenyl-	184	C12H12N2	000530-50-7	42
5	Hydrazine, 1,1-diphenyl- $$ .alp...	184	C12H12N2	000530-50-7	40





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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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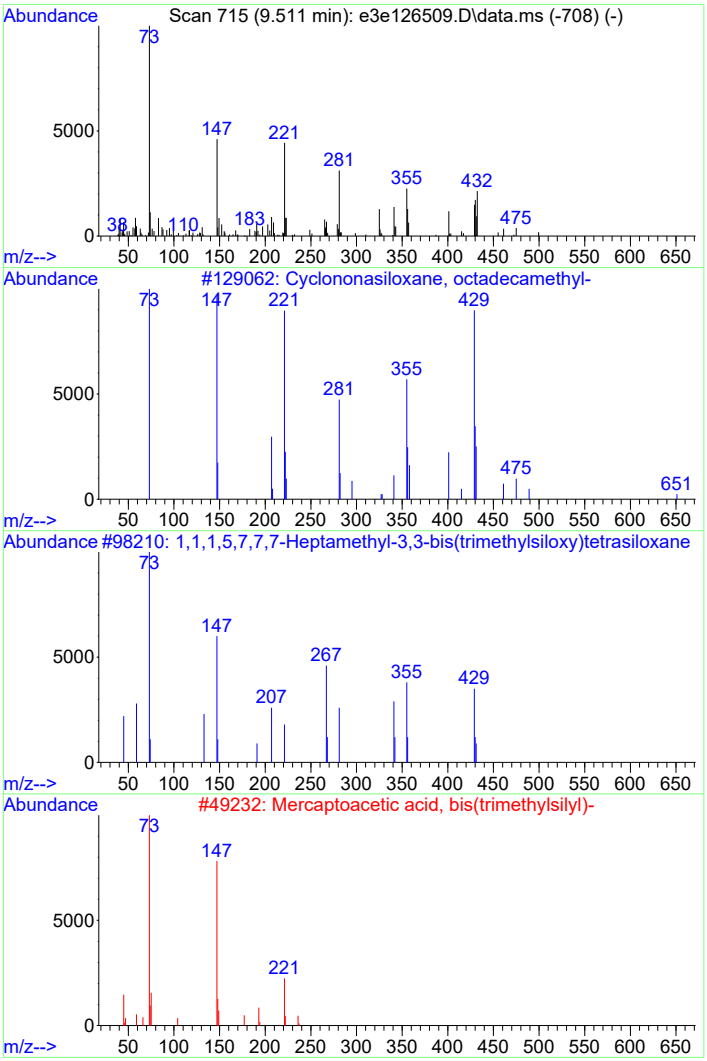
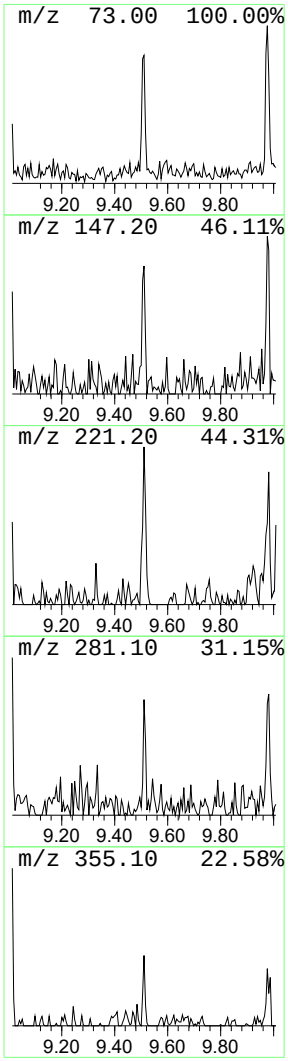
Peak Number 43 Siloxane Concentration Rank 29

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.511	0.00	103956	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	59
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	17
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	9
4	2H-1,4-Benzodiazepin-2-one, 7-ch...	430	C21H27ClN2O2Si2	055319-93-2	9
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	8





Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
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ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

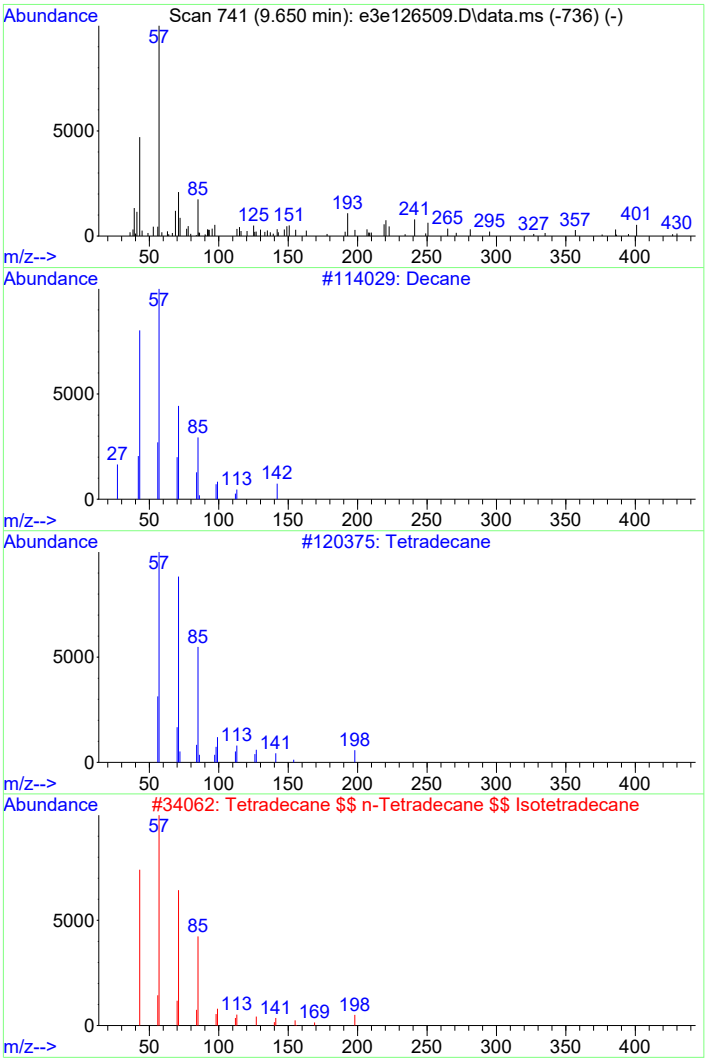
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

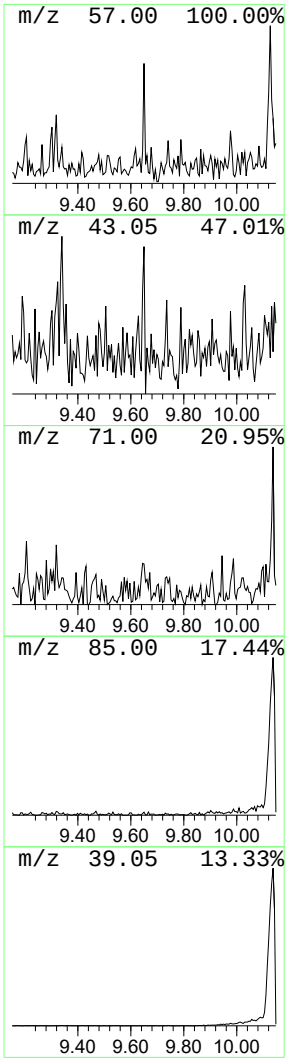
****

Peak Number 45 Alkane Concentration Rank 68

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.650	0.00	17752	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane	142	C10H22	000124-18-5	38
2	Tetradecane	198	C14H30	000629-59-4	35
3	Tetradecane $$ n-Tetradecane $$ ...	198	C14H30	000629-59-4	35
4	Eicosane, 3-methyl-	296	C21H44	006418-46-8	32
5	2-Butanone, 1-bromo-3,3-dimethyl-	178	C6H11BrO	005469-26-1	27





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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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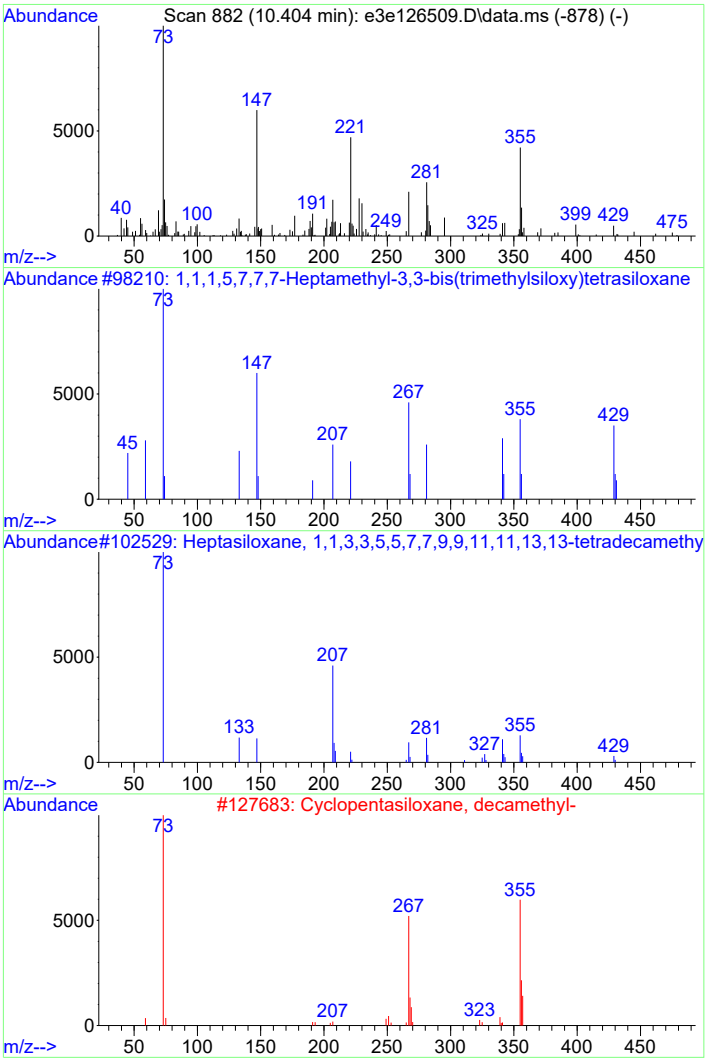
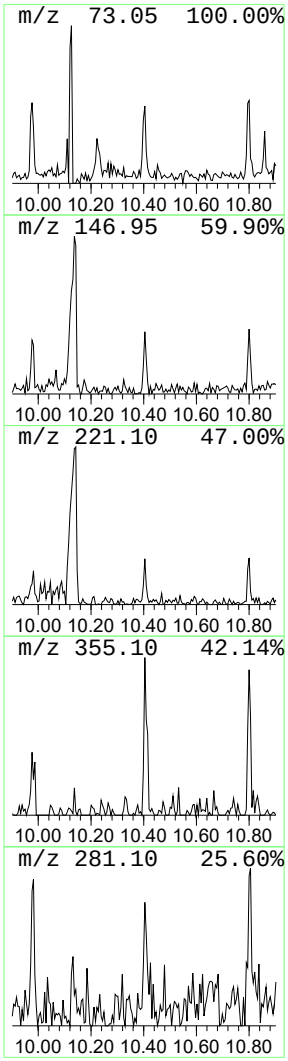
Peak Number 49 Siloxane Concentration Rank 34

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.404	0.00	94969	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	23
2	Heptasiloxane, 1,1,3,3,5,5,7,7,9...	504	C14H44O6Si7	019095-23-9	23
3	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	16
4	Benzoic acid, 2,4-bis[(trimethyl...	370	C16H30O4Si3	010586-16-0	16
5	N-Methyladrenaline, tri-TMS	413	C19H39NO3Si3	000000-00-0	16





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Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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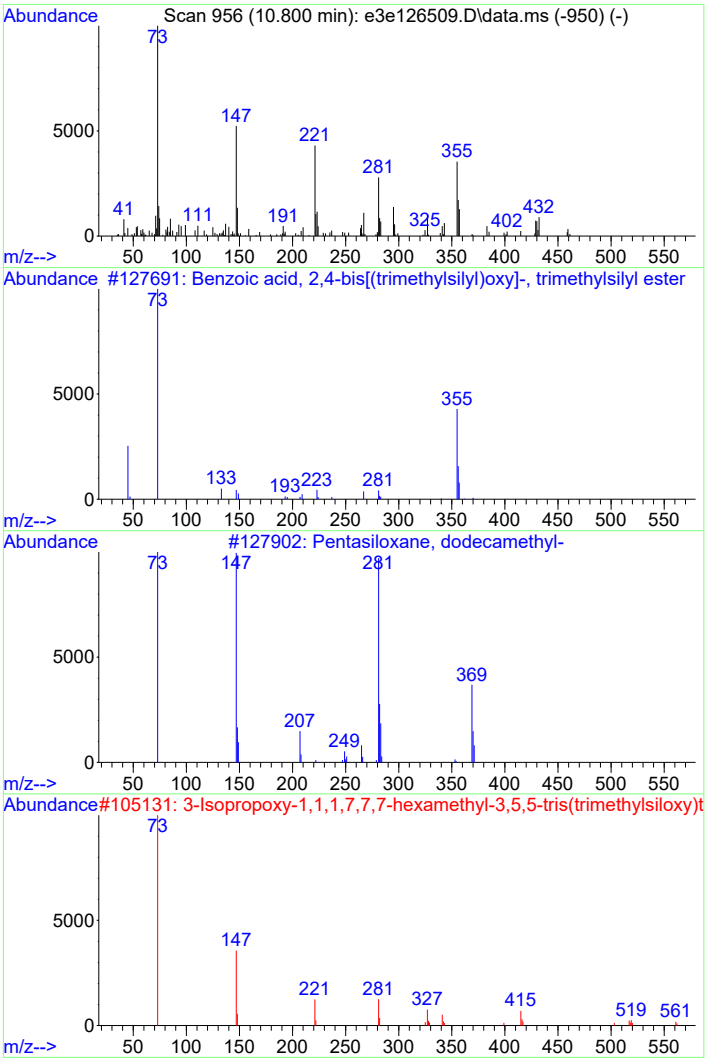
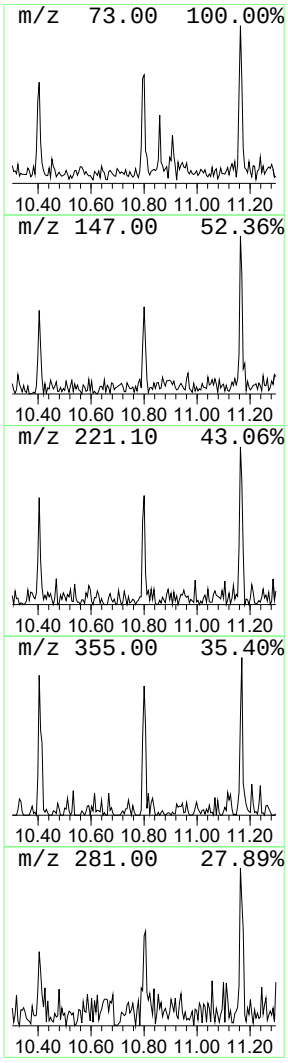
Peak Number 51 Siloxane Concentration Rank 26

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.800	0.00	107258	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzoic acid, 2,4-bis[(trimethyl...	370	C16H30O4Si3	010586-16-0	12
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12
3	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	10
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	10
5	2-Dimethyl(trimethylsilylmethyl)...	372	C21H48OSi2	000000-00-0	9





Library Search Compound Report

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ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

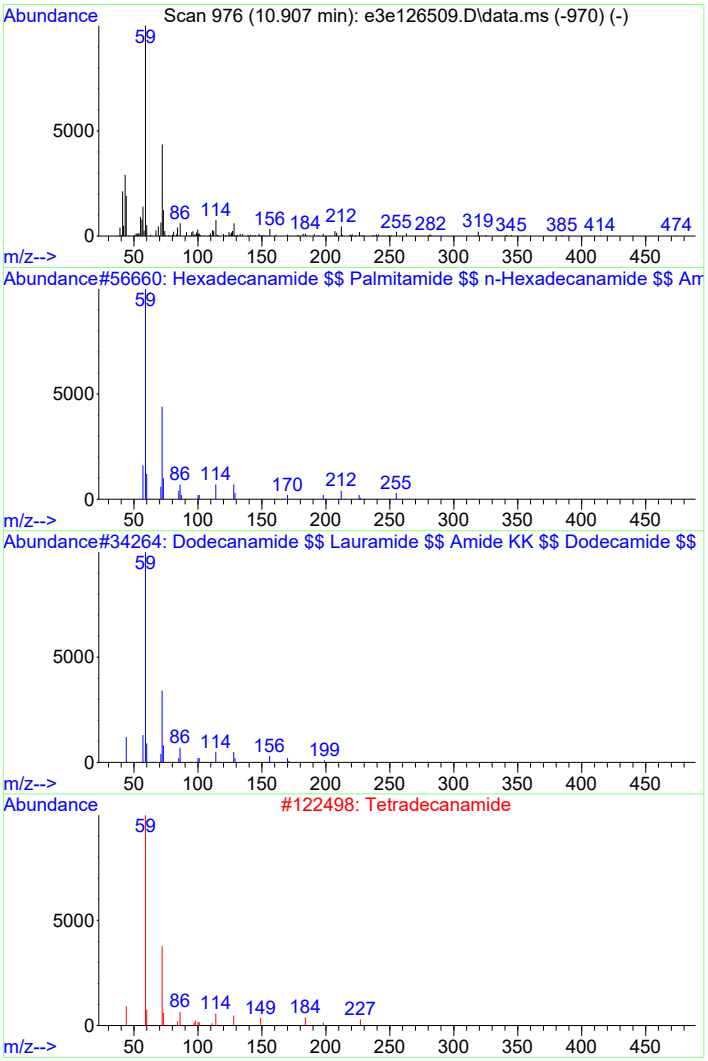
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

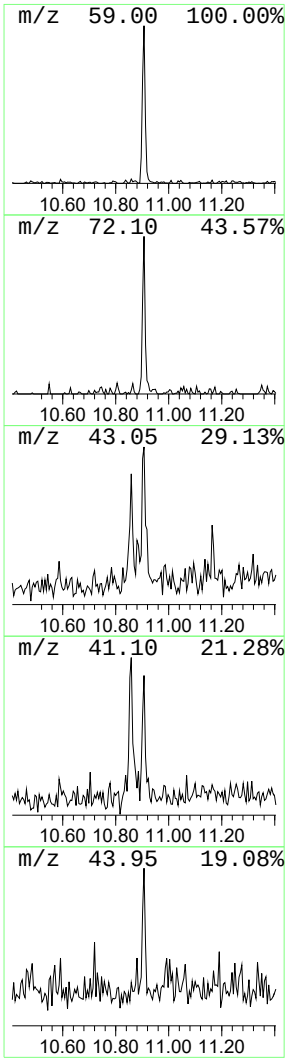
****

Peak Number 53 Hexadecanamide Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.907	0.00	226545	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecanamide $$ Palmitamide $$...	255	C16H33NO	000629-54-9	81
2	Dodecanamide $$ Lauramide $$ Ami...	199	C12H25NO	001120-16-7	72
3	Tetradecanamide	227	C14H29NO	000638-58-4	64
4	Benzeneethanamine, 2-fluoro-.bet...	229	C11H16FNO3	061338-98-5	64
5	Octadecanamide $$ Stearamide $$ ...	283	C18H37NO	000124-26-5	64





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Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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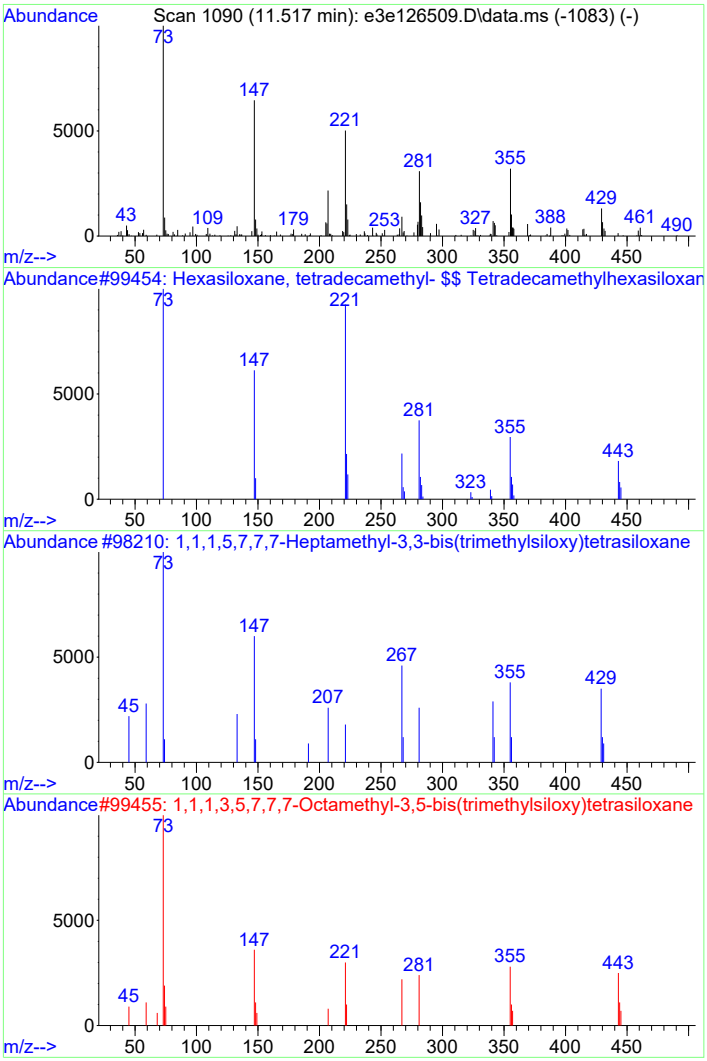
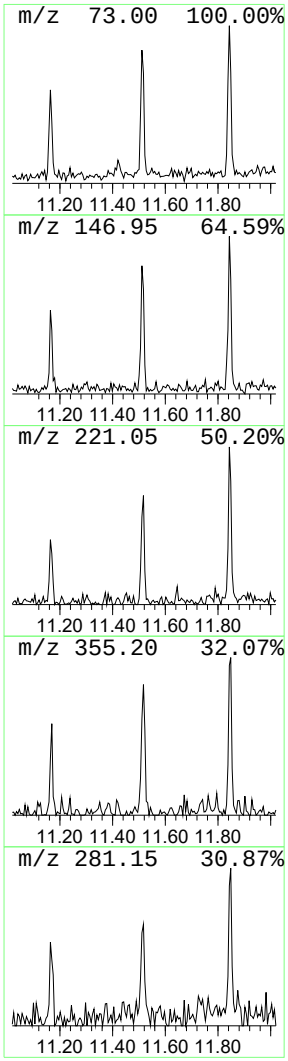
Peak Number 59 Siloxane Concentration Rank 20

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.517	0.00	211234	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexasiloxane, tetradecamethyl- $...	458	C14H42O5Si6	000107-52-8	40
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	40
3	1,1,1,3,5,7,7,7-Octamethyl-3,5-b...	458	C14H42O5Si6	002003-92-1	38
4	Cyclohexanone, 2-[2-nitro-1-(2-n...	297	C18H19NO3	000000-00-0	25
5	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	22





AECOM_e3g_TPHEXT.M Fri Jan 10 11:05:04 2025 19

Library Search Compound Report

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Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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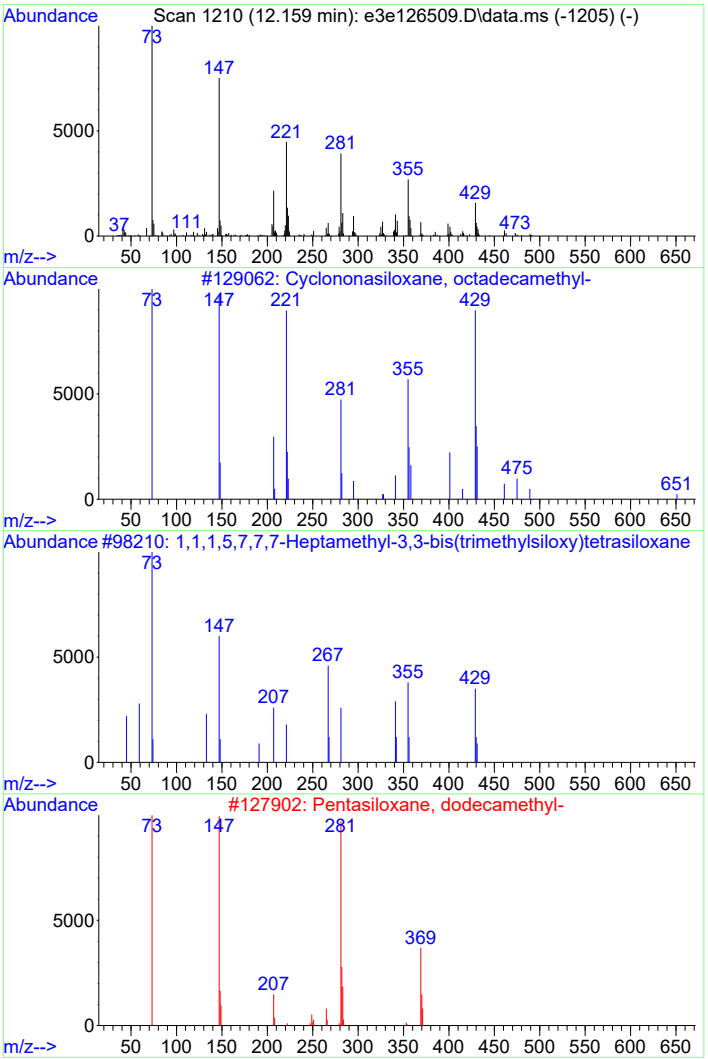
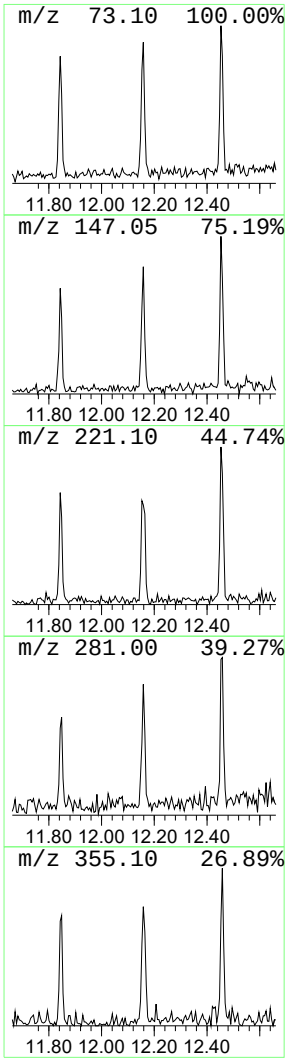
Peak Number 64 Siloxane Concentration Rank 16

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.159	0.00	284765	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	49
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	40
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	37
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	35
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25





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Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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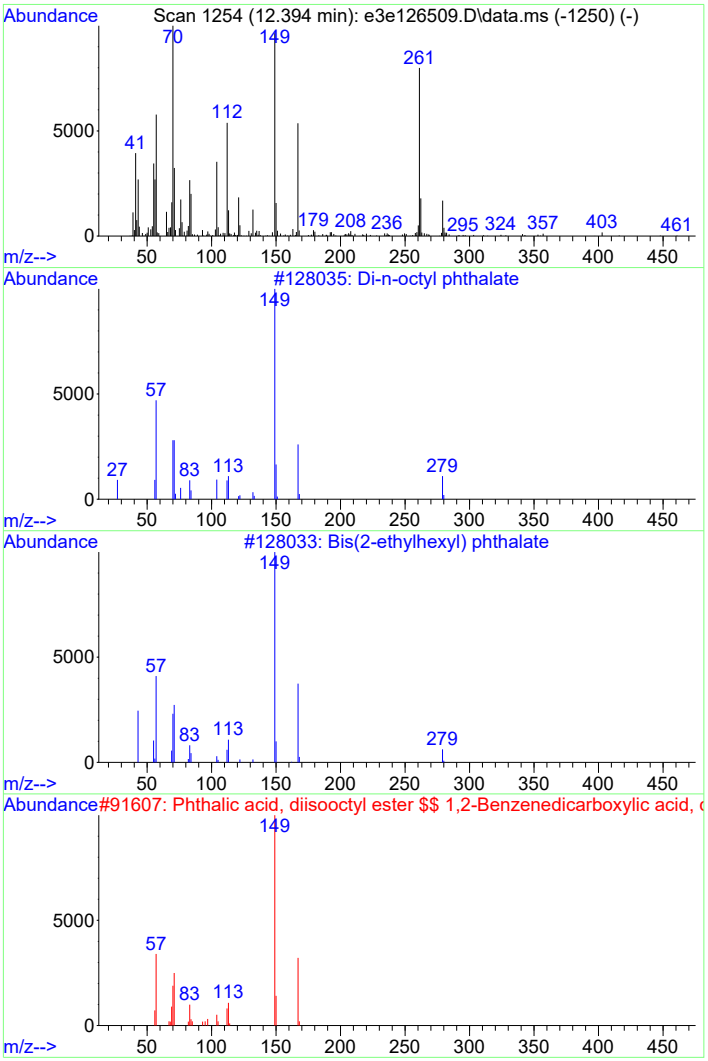
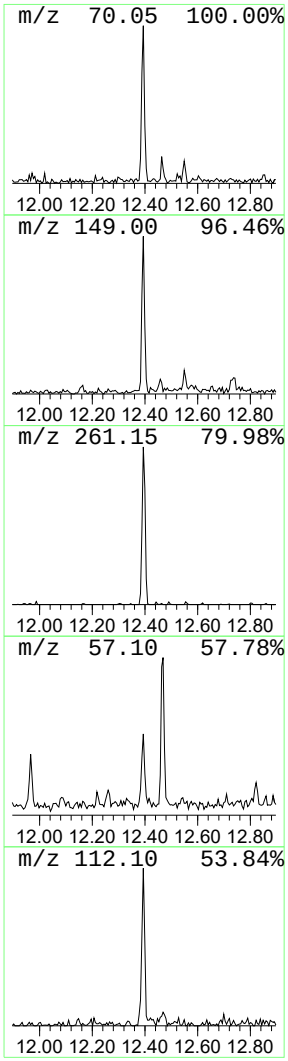
Peak Number 67 Phthalate Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.394	0.00	427496	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Di-n-octyl phthalate	390	C24H38O4	000117-84-0	22
2	Bis(2-ethylhexyl) phthalate	390	C24H38O4	000117-81-7	16
3	Phthalic acid, diisooctyl ester ...	390	C24H38O4	001330-91-2	14
4	Bis(2-ethylhexyl) phthalate	390	C24H38O4	000117-81-7	14
5	Phthalic acid, 2-hexyl ester	250	C14H18O4	000000-00-0	14





AECOM_e3g_TPHEXT.M Fri Jan 10 11:05:07 2025 : 21

(b) (4)

DA69665T

Library Search Compound Report

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Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

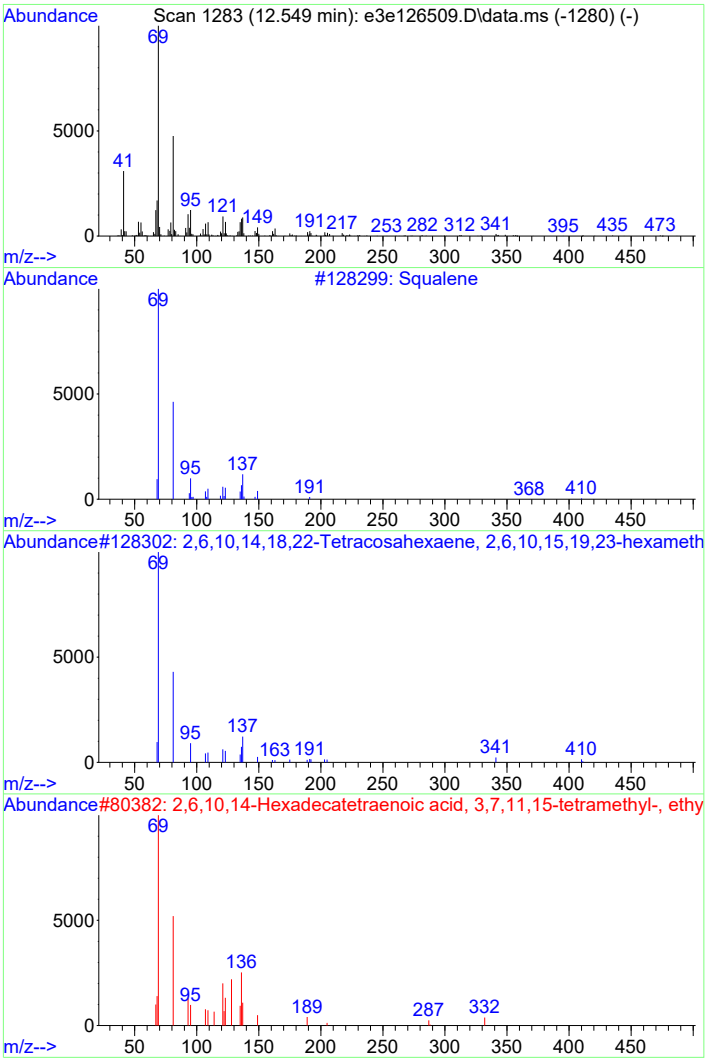
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

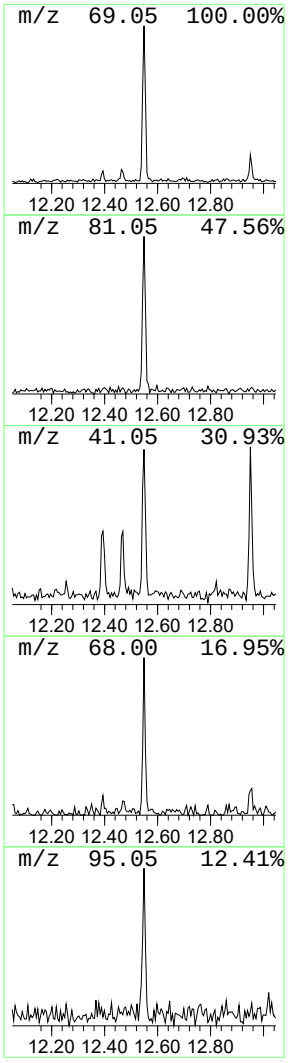
****

Peak Number 68 Squalene Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.549	0.00	456733	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Squalene	410	C30H50	007683-64-9	87
2	2,6,10,14,18,22-Tetracosahexaene...	410	C30H50	000111-02-4	83
3	2,6,10,14-Hexadecatetraenoic aci...	332	C22H36O2	024035-35-6	72
4	7,11-Dimethyldodeca-2,6,10-trien...	208	C14H24O	125529-10-4	64
5	4-Methyl-1,5-Heptadiene	110	C8H14	000998-94-7	58





Library Search Compound Report

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Acq On : 9 Jan 2025 3:43 pm
Operator :(b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

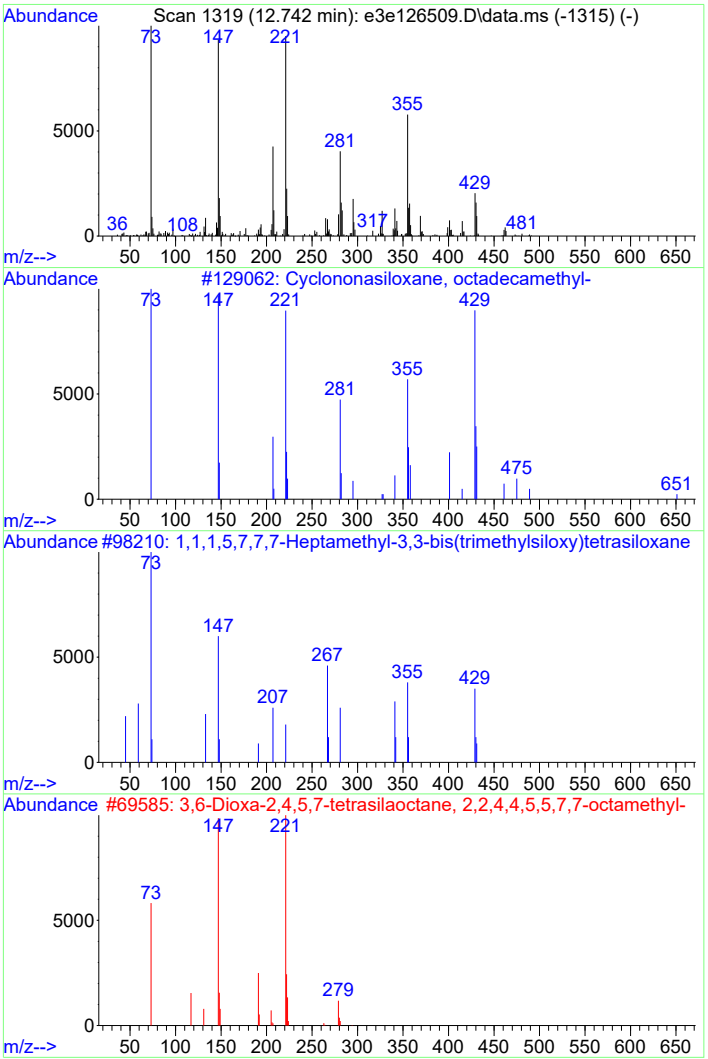
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

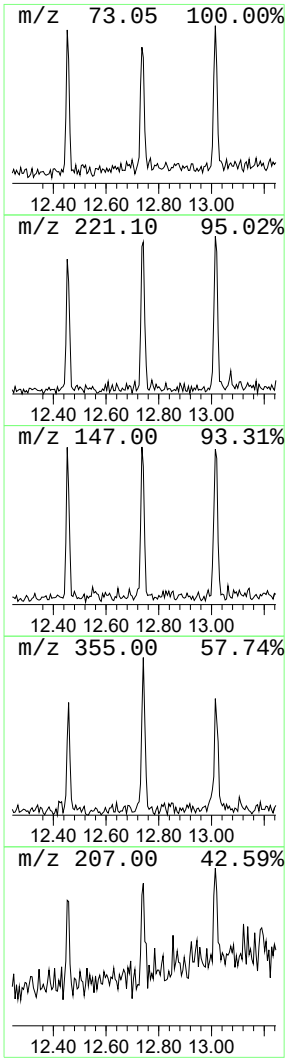
****

Peak Number 69 Siloxane Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.742	0.00	391666	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	80
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	33
3	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	23
4	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	22
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12





Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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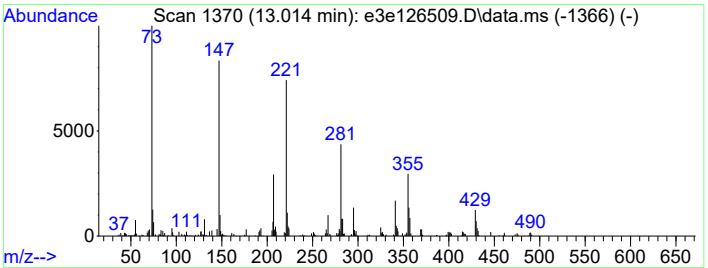
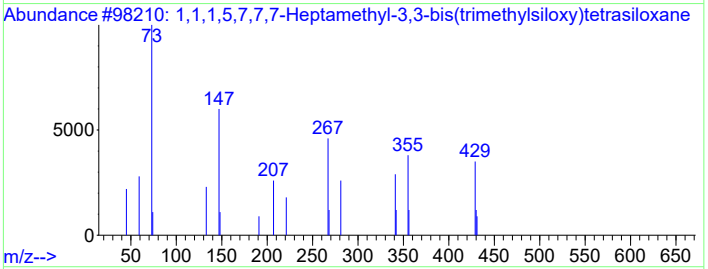
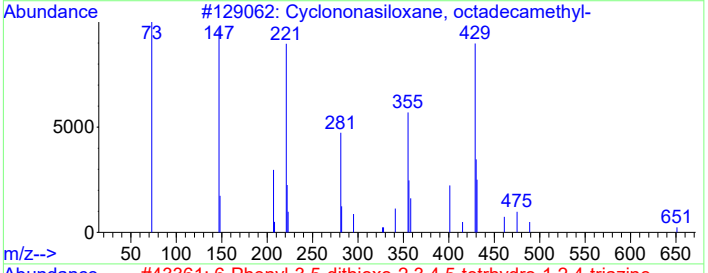
Peak Number 71 Siloxane Concentration Rank 8

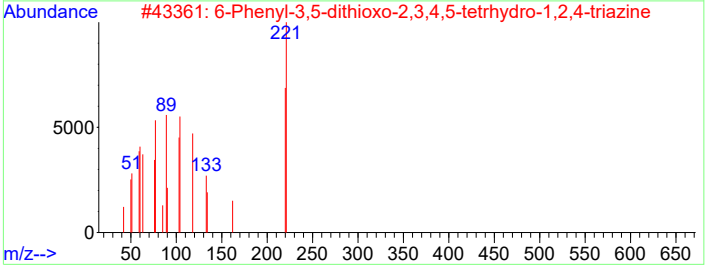
R.T.	EstConc	Area	Relative to ISTD	R.T.
13.014	0.00	414978	External Standard	0.000

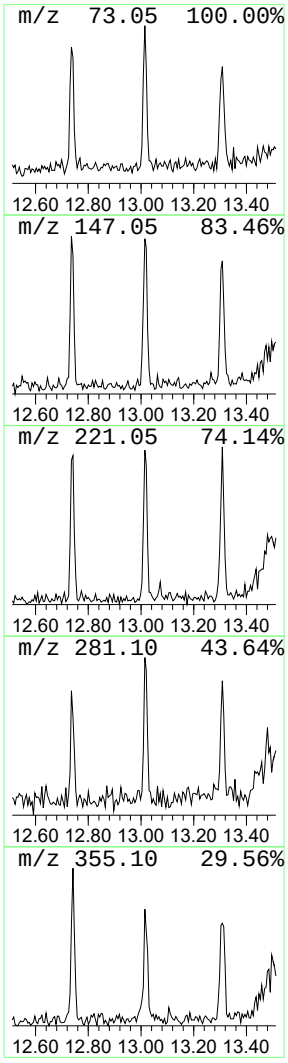
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	38
2	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	38
3	6-Phenyl-3,5-dithioxo-2,3,4,5-te...	221	C9H7N3S2	000000-00-0	35
4	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	22
5	2,3,4,4,5-Pentachloro-2-cyclopen...	252	C5HCl5O	005659-47-2	18











AECOM_e3g_TPHEXT.M Fri Jan 10 11:05:12 2025 24

Library Search Compound Report

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Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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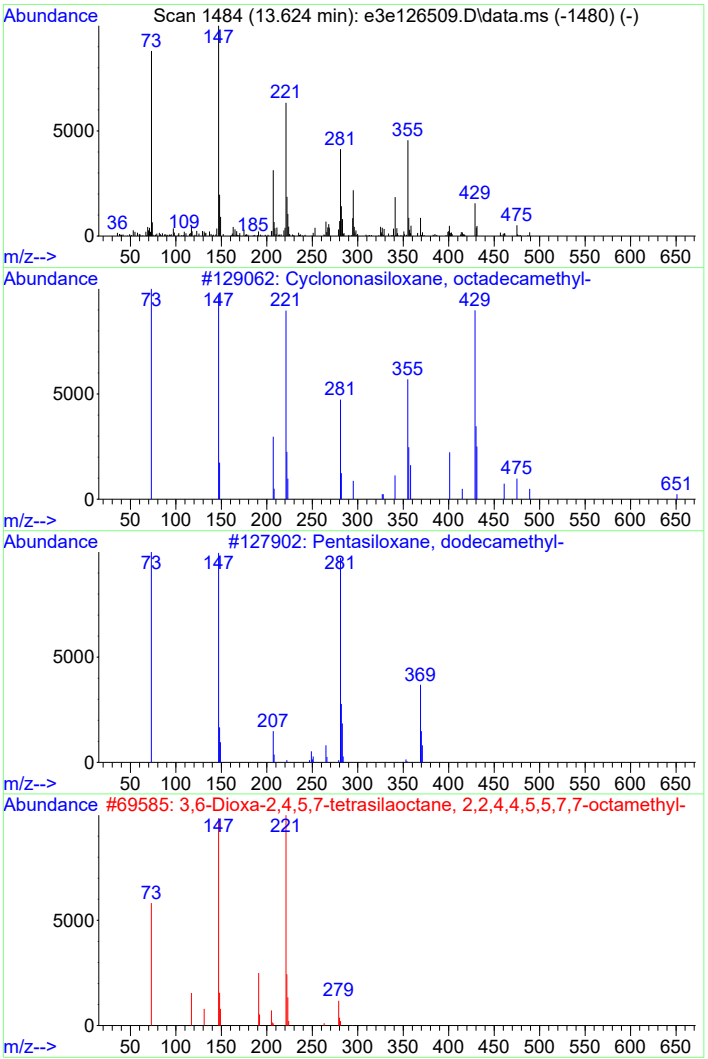
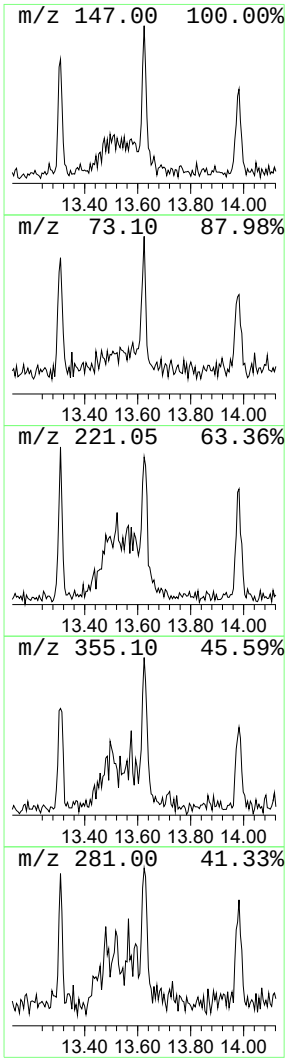
Peak Number 74 Siloxane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.624	0.00	556200	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	37
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25
3	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
4	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	16
5	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	16





Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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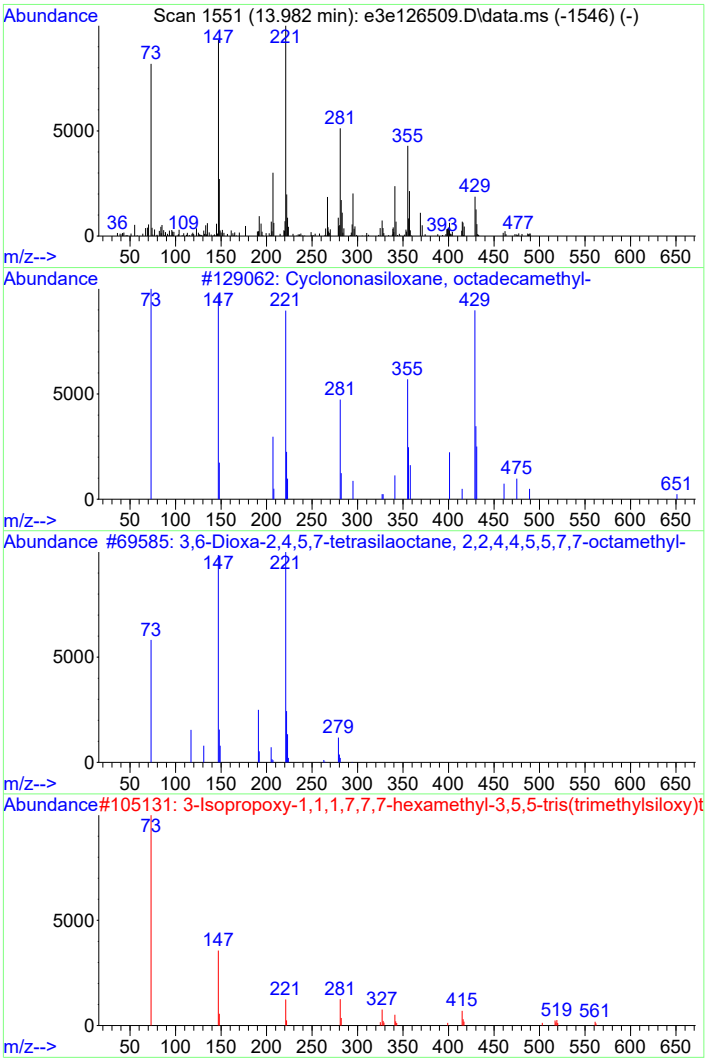
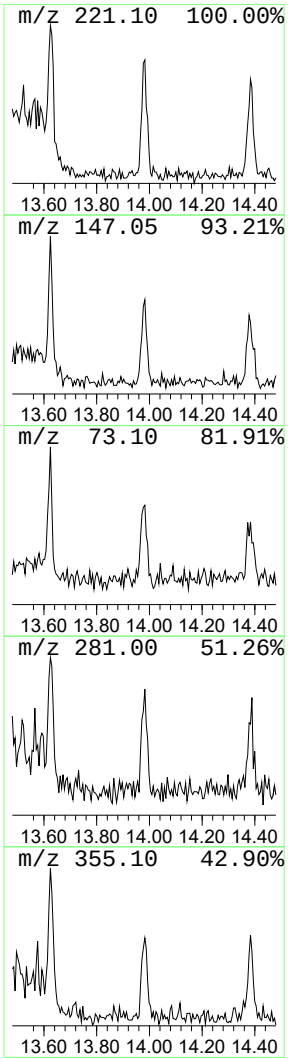
Peak Number 76 Siloxane Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.982	0.00	377805	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	72
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
3	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	16
4	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	16
5	Oxazole, 2,5-diphenyl-	221	C15H11NO	000092-71-7	14





Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

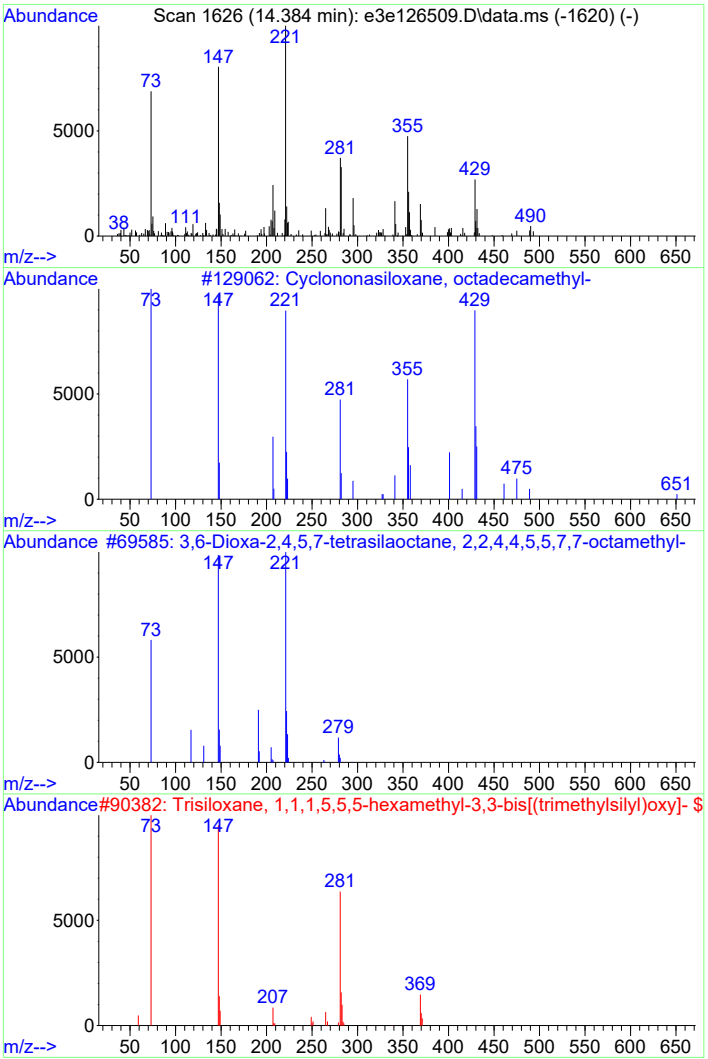
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

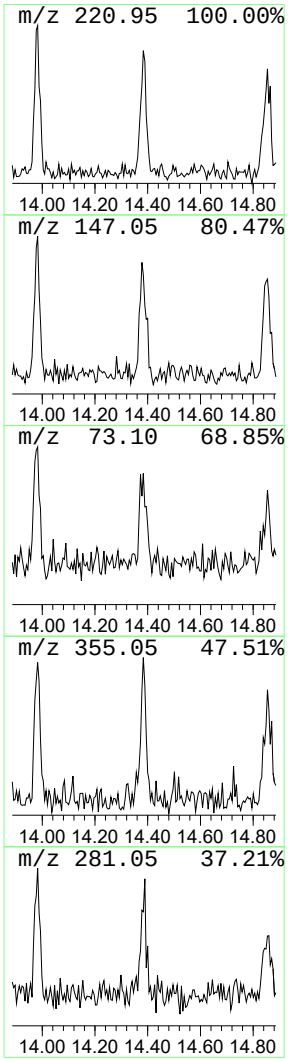
****

Peak Number 78 Siloxane Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.384	0.00	341901	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	33
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	32
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
4	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12
5	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	12





Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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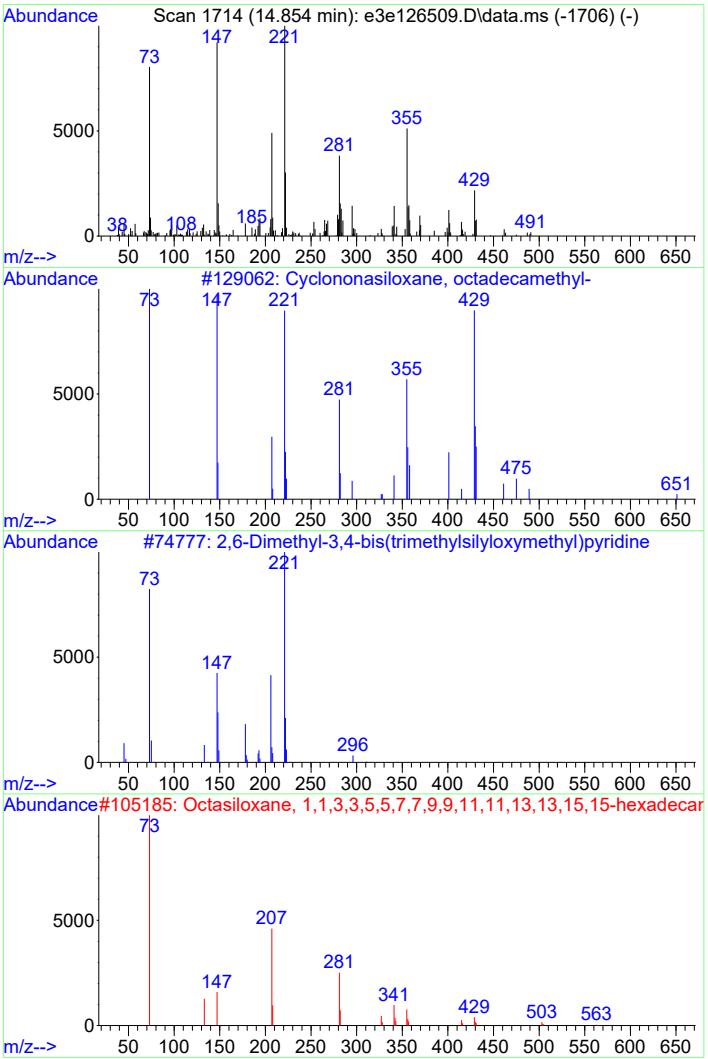
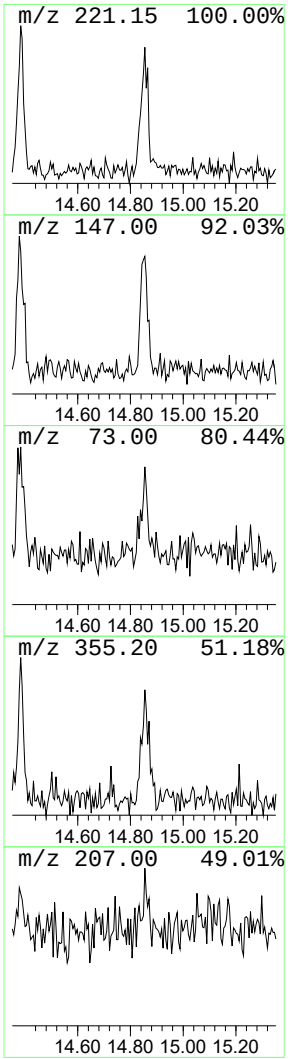
Peak Number 79 Siloxane Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.854	0.00	332239	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	42
2	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	16
3	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	12
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
5	6-Phenyl-3,5-dithioxo-2,3,4,5-te...	221	C9H7N3S2	000000-00-0	11





Library Search Compound Report

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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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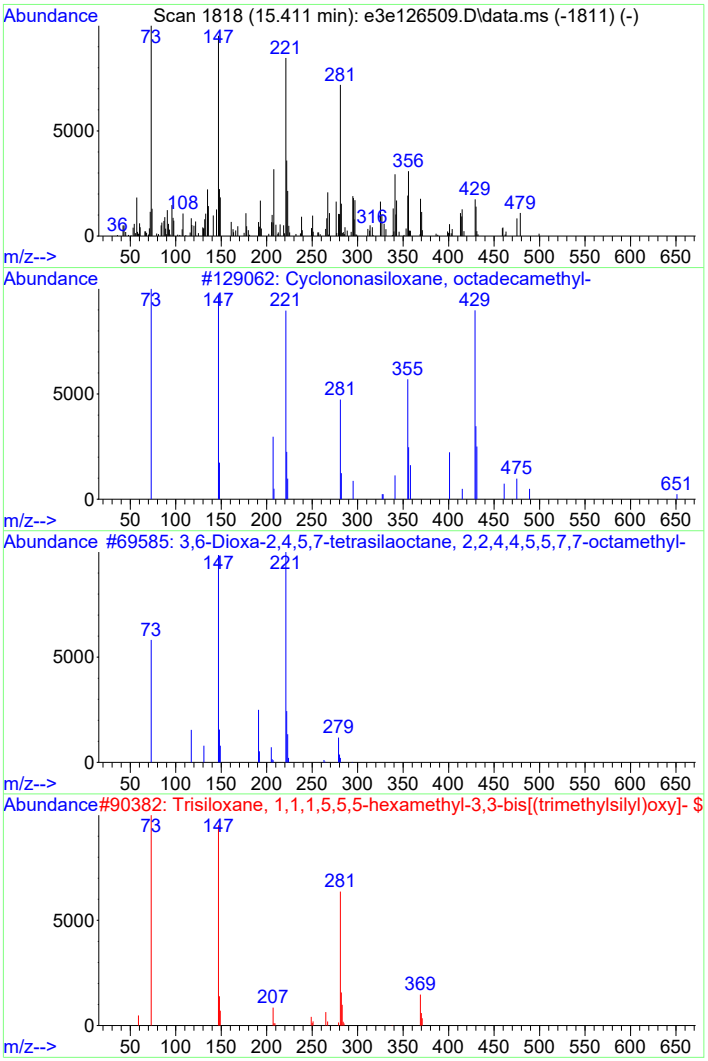
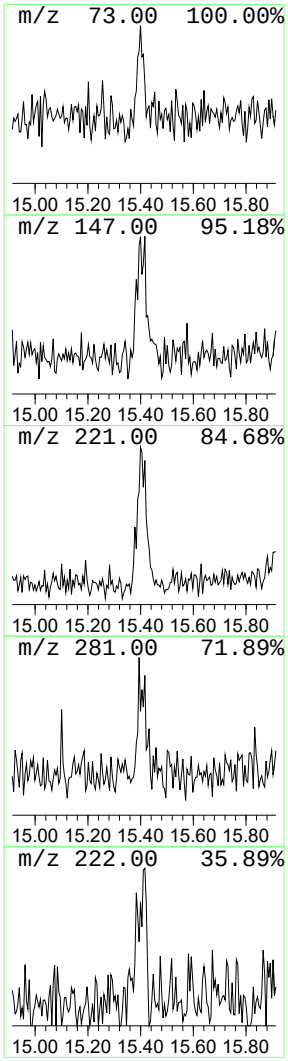
Peak Number 80 Siloxane Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.411	0.00	232395	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	50
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	37
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	27
4	7a,9c-(Iminoethano)phenanthro[4,...	281	C18H19NO2	024695-70-3	25
5	(E)-2-Hydroxy-4'-cyano-stilbene	221	C15H11NO	000000-00-0	16





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Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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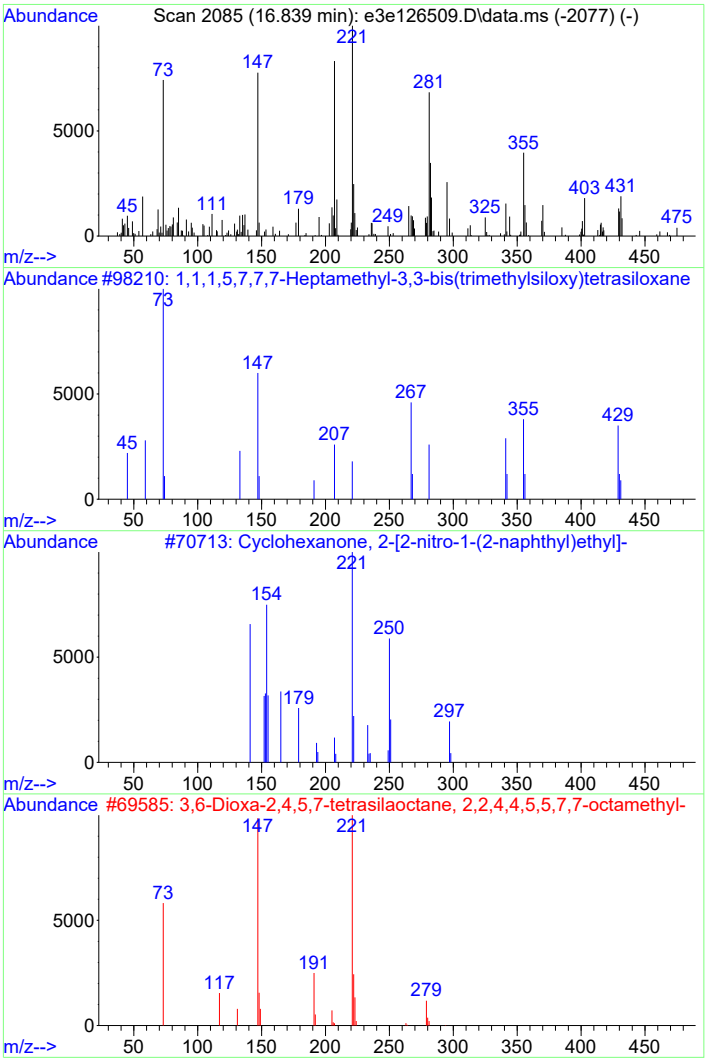
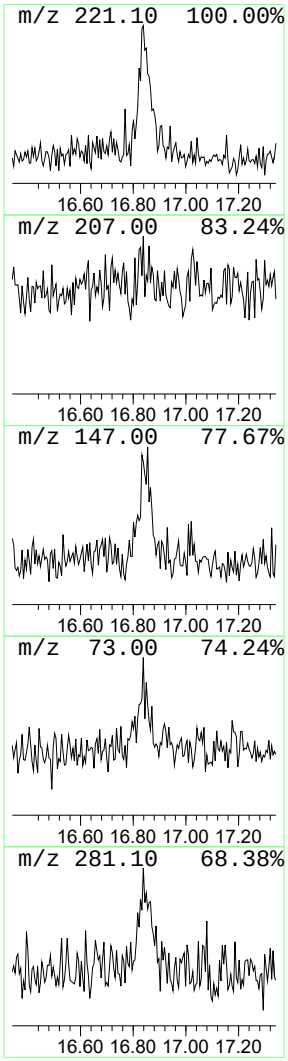
Peak Number 81 Siloxane Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
16.839	0.00	324152	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	37
2	Cyclohexanone, 2-[2-nitro-1-(2-n...	297	C18H19NO3	000000-00-0	25
3	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	16
4	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	12
5	1,4-Benzenediol, 2,5-bis(1,1-dim...	222	C14H22O2	000088-58-4	11





Library Search Compound Report

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Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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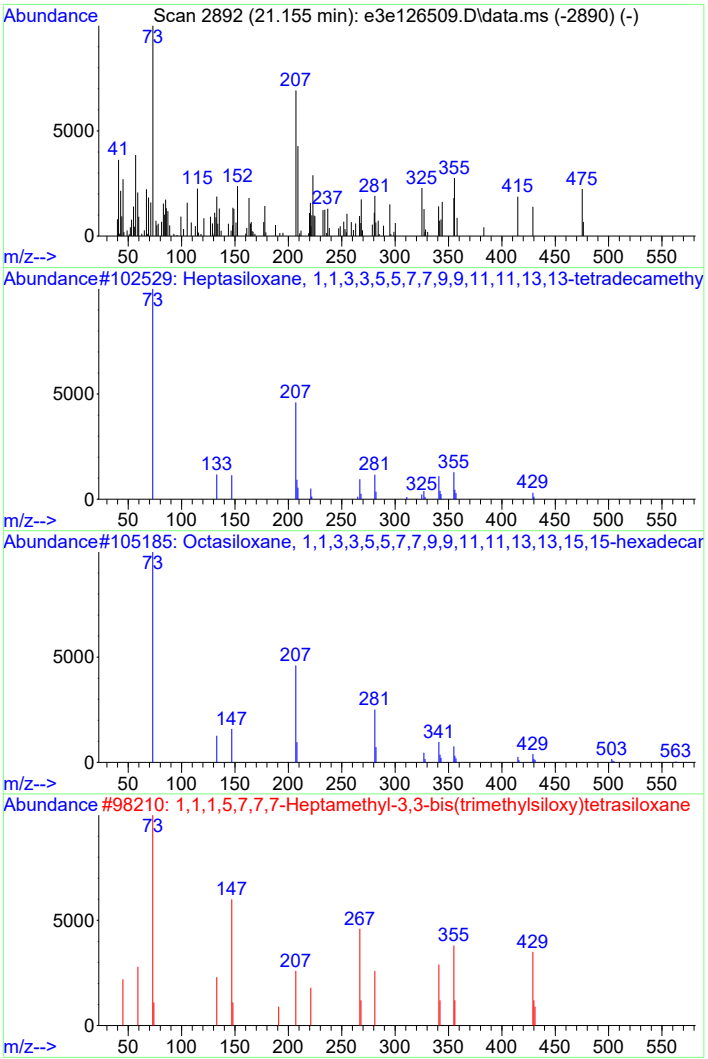
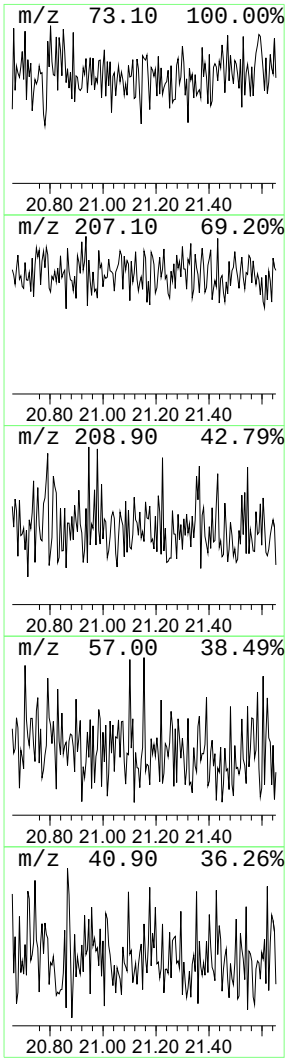
Peak Number 82 Siloxane Concentration Rank 50

R.T.	EstConc	Area	Relative to ISTD	R.T.
21.155	0.00	34744	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptasiloxane, 1,1,3,3,5,5,7,7,9...	504	C14H44O6Si7	019095-23-9	32
2	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	22
3	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	12
4	Benzeneacetic acid, 3,4-dimethox...	268	C13H20O4Si	027750-60-3	10
5	Benzeneethanamine, N-[(pentafluo...	475	C21H26F5NO2Si2	050314-21-1	10





AECOM_e3g_TPHEXT.M Fri Jan 10 11:05:23 2025 31

Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126509.D
Acq On : 9 Jan 2025 3:43 pm
Operator : (b) (6)
Sample : da69665-7t
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Siloxane	6.548	0.0		76642	0	0.000	1	1.0
Siloxane	6.740	0.0		76847	0	0.000	1	1.0
Siloxane	7.019	0.0		855562	0	0.000	1	1.0
Siloxane	7.099	0.0		1657670	0	0.000	1	1.0
Siloxane	7.163	0.0		19677600	0	0.000	1	1.0
Alkane	7.906	0.0		68916	0	0.000	1	1.0
Thieno[3,2-c]py...	8.393	0.0		99211	0	0.000	1	1.0
Siloxane	8.452	0.0		320758	0	0.000	1	1.0
Diphenylamine	9.222	0.0		51504	0	0.000	1	1.0
Siloxane	9.511	0.0		103956	0	0.000	1	1.0
Alkane	9.650	0.0		17752	0	0.000	1	1.0
Siloxane	10.404	0.0		94969	0	0.000	1	1.0
Siloxane	10.800	0.0		107258	0	0.000	1	1.0
Hexadecanamide	10.907	0.0		226545	0	0.000	1	1.0
Siloxane	11.517	0.0		211234	0	0.000	1	1.0
Siloxane	12.159	0.0		284765	0	0.000	1	1.0
Phthalate	12.394	0.0		427496	0	0.000	1	1.0
Squalene	12.549	0.0		456733	0	0.000	1	1.0
Siloxane	12.742	0.0		391666	0	0.000	1	1.0
Siloxane	13.014	0.0		414978	0	0.000	1	1.0
Siloxane	13.624	0.0		556200	0	0.000	1	1.0
Siloxane	13.982	0.0		377805	0	0.000	1	1.0
Siloxane	14.384	0.0		341901	0	0.000	1	1.0
Siloxane	14.854	0.0		332239	0	0.000	1	1.0
Siloxane	15.411	0.0		232395	0	0.000	1	1.0
Siloxane	16.839	0.0		324152	0	0.000	1	1.0
Siloxane	21.155	0.0		34744	0	0.000	1	1.0

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 10 09:50:20 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

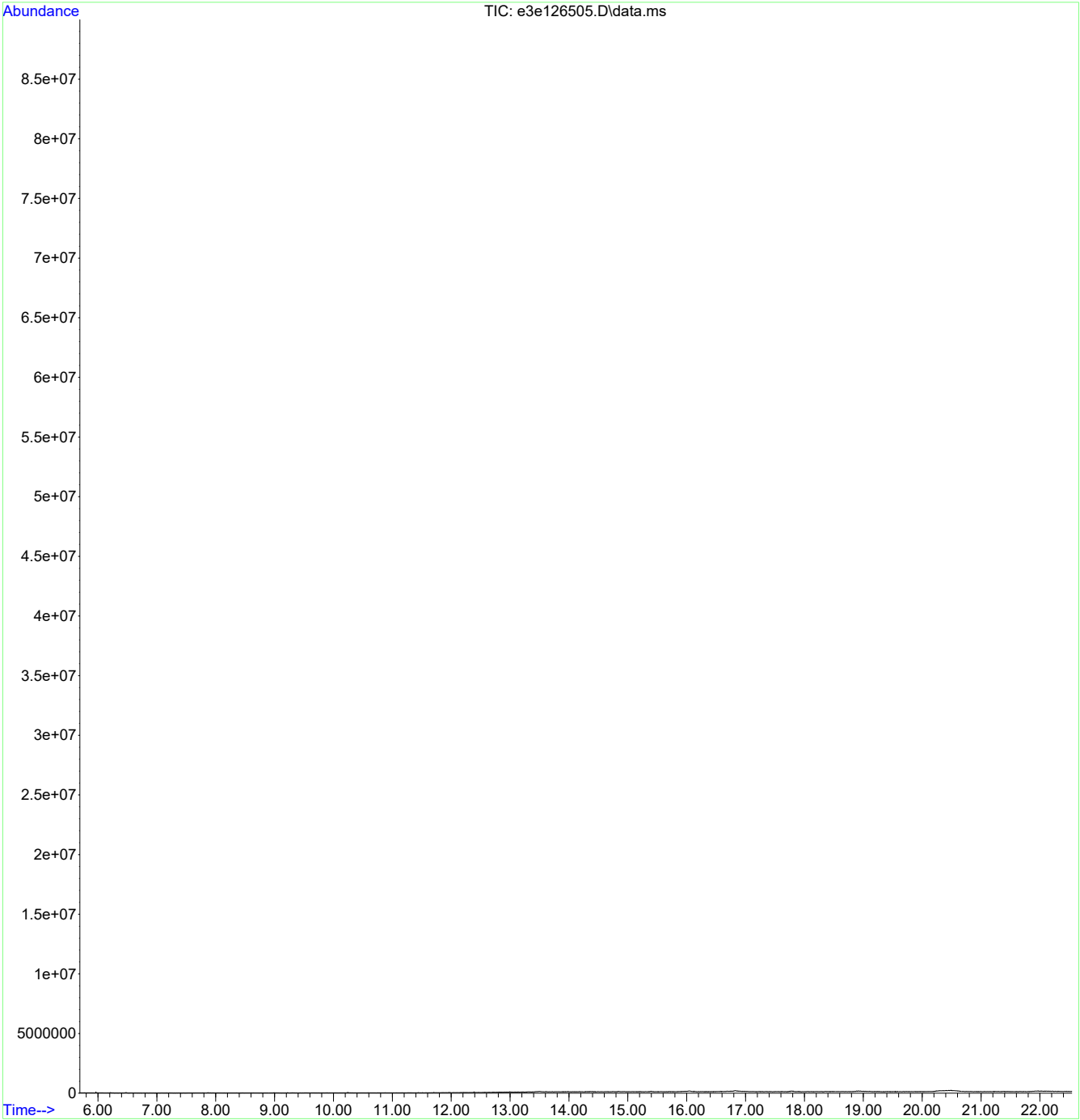
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	0.000	230	0	0.00		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

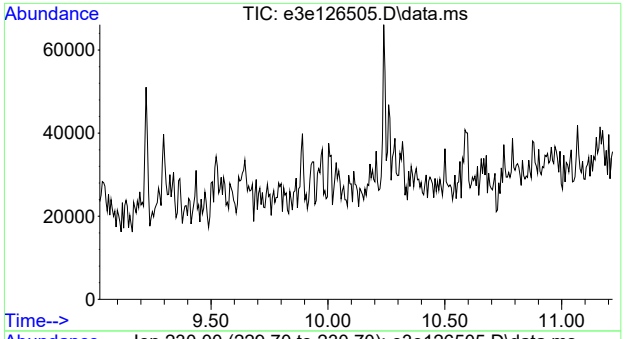
Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

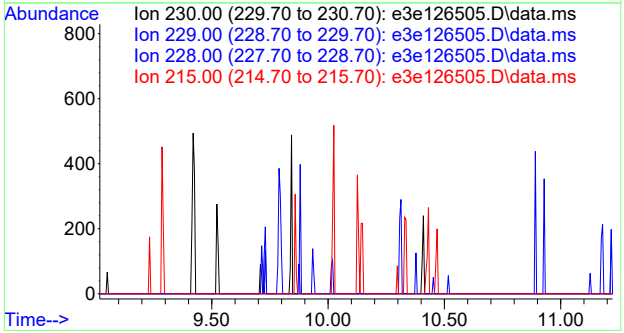
Quant Time: Jan 10 09:50:20 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



AECOM_e3g_TPHEXT.M Fri Jan 10 10:36:01 2025 : 2

(b) (4)





#26
o-Terphenyl
Concen: 0.00
Expected RT: 10.12 min

Lab File: e3e126505.D
Acq: 9 Jan 2025 1:29 pm

Tgt Ion: 230

Sig	Exp Ratio
230	100
229	63.0
228	47.3
215	50.0

7.2.1

7

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126505.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.559	157	163	165	rBV7	8007	10775	6.89%	0.729%
2	6.580	165	167	169	rVB3	9031	6735	4.30%	0.455%
3	6.612	169	173	177	rVB7	10467	14042	8.97%	0.949%
4	6.650	177	180	184	rBV6	10813	10598	6.77%	0.717%
5	6.676	184	185	187	rBV2	7137	4426	2.83%	0.299%
6	6.719	191	193	196	rVV3	8155	5747	3.67%	0.389%
7	6.757	198	200	202	rBV3	7963	6505	4.16%	0.440%
8	6.773	202	203	207	rVB4	3994	4326	2.76%	0.292%
9	6.831	210	214	219	rVB8	7546	9607	6.14%	0.650%
10	6.885	219	224	228	rBV6	4786	7754	4.96%	0.524%
11	6.944	232	235	237	rVB4	8314	7927	5.07%	0.536%
12	6.981	237	242	244	rBV4	6935	8192	5.24%	0.554%
13	7.040	249	253	255	rVB3	8719	8734	5.58%	0.591%
14	7.077	255	260	263	rBV6	9676	15448	9.87%	1.044%
15	7.136	268	271	273	rBV3	5510	3624	2.32%	0.245%
16	7.163	273	276	278	rBV4	10361	5795	3.70%	0.392%
17	7.217	281	286	289	rVB7	13670	16537	10.57%	1.118%
18	7.265	289	295	297	rVB6	9735	14069	8.99%	0.951%
19	7.302	297	302	304	rBV5	7023	10747	6.87%	0.727%
20	7.345	304	310	312	rBV6	4459	7282	4.65%	0.492%
21	7.366	312	314	318	rBV5	4420	6176	3.95%	0.418%
22	7.393	318	319	325	rVB4	8807	14010	8.95%	0.947%
23	7.463	325	332	335	rBV8	14658	23281	14.88%	1.574%
24	7.511	338	341	343	rVB3	6301	3793	2.42%	0.256%
25	7.537	343	346	349	rBV5	7436	6116	3.91%	0.414%
26	7.586	353	355	358	rVB4	7546	7660	4.90%	0.518%
27	7.628	359	363	365	rVB5	3890	4121	2.63%	0.279%
28	7.660	365	369	372	rBV6	8049	8933	5.71%	0.604%
29	7.719	377	380	387	rVB7	5990	8641	5.52%	0.584%
30	7.794	387	394	398	rBV7	16870	24597	15.72%	1.663%
31	7.837	398	402	403	rBV4	3669	4406	2.82%	0.298%
32	7.869	403	408	410	rBV6	29965	25624	16.38%	1.733%
33	7.901	410	414	419	rVB8	12721	20567	13.14%	1.391%
34	7.949	421	423	426	rVB4	8165	7246	4.63%	0.490%
35	8.040	434	440	444	rVB8	9649	17080	10.92%	1.155%
36	8.067	444	445	449	rBV4	6860	8560	5.47%	0.579%
37	8.099	450	451	456	rVB4	8819	11937	7.63%	0.807%
38	8.142	456	459	462	rVB5	10159	11230	7.18%	0.759%
39	8.174	462	465	466	rBV2	8388	6197	3.96%	0.419%
40	8.201	469	470	472	rBV	6973	4389	2.80%	0.297%

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	8.281	478	485	488	rBV9	7787	14186	9.07%	0.959%
42	8.350	495	498	504	rVB6	10722	12930	8.26%	0.874%
43	8.425	510	512	515	rVB4	4930	5282	3.38%	0.357%
44	8.457	515	518	523	rBV6	20441	17071	10.91%	1.154%
45	8.506	524	527	530	rBV5	5765	4382	2.80%	0.296%
46	8.597	542	544	546	rBV3	6616	6961	4.45%	0.471%
47	8.639	550	552	555	rBV4	9088	8740	5.59%	0.591%
48	8.687	555	561	564	rBV7	7027	11044	7.06%	0.747%
49	8.752	571	573	575	rBV3	6715	4374	2.80%	0.296%
50	8.810	581	584	588	rBV4	8136	13083	8.36%	0.885%
51	8.869	592	595	597	rVV4	5618	6080	3.89%	0.411%
52	8.912	599	603	606	rVV2	5464	8399	5.37%	0.568%
53	8.966	610	613	615	rBV4	9822	9925	6.34%	0.671%
54	8.992	615	618	624	rBV3	30061	30470	19.47%	2.060%
55	9.035	624	626	630	rVB5	7167	9084	5.81%	0.614%
56	9.137	641	645	650	rVB8	7676	11390	7.28%	0.770%
57	9.169	650	651	653	rBV	7221	5719	3.65%	0.387%
58	9.222	659	661	665	rVB4	31362	22944	14.66%	1.551%
59	9.297	665	675	678	rBV10	20031	27500	17.57%	1.859%
60	9.367	685	688	690	rVB4	10794	9218	5.89%	0.623%
61	9.404	691	695	697	rVB4	6125	7160	4.58%	0.484%
62	9.436	698	701	704	rVB5	12439	9707	6.20%	0.656%
63	9.522	711	717	720	rBV7	17039	30119	19.25%	2.036%
64	9.581	727	728	733	rVB5	7060	7498	4.79%	0.507%
65	9.645	733	740	747	rVB5	14791	39880	25.49%	2.696%
66	9.693	747	749	750	rBV2	10086	6286	4.02%	0.425%
67	9.741	756	758	761	rVB4	7515	7137	4.56%	0.483%
68	9.864	778	781	782	rVV2	8205	6016	3.84%	0.407%
69	9.891	782	786	790	rVB6	18489	18655	11.92%	1.261%
70	9.939	790	795	796	rBV5	11306	13837	8.84%	0.936%
71	9.976	797	802	805	rVV7	13204	18014	11.51%	1.218%
72	10.003	805	807	810	rVB4	14845	12997	8.31%	0.879%
73	10.035	811	813	817	rVB5	8831	10093	6.45%	0.682%
74	10.089	822	823	826	rBV3	7442	6132	3.92%	0.415%
75	10.180	839	840	844	rBV4	5163	4202	2.69%	0.284%
76	10.239	847	851	854	rBV	39877	32371	20.69%	2.189%
77	10.260	854	855	857	rVB2	18204	10739	6.86%	0.726%
78	10.319	863	866	870	rVB6	14127	16053	10.26%	1.085%
79	10.356	870	873	875	rBV4	8146	8985	5.74%	0.608%
80	10.501	898	900	906	rVB7	12303	11186	7.15%	0.756%
81	10.586	913	916	920	rBV6	16462	23410	14.96%	1.583%
82	10.752	942	947	950	rBV7	15720	22098	14.12%	1.494%
83	10.789	952	954	956	rVV3	9531	5400	3.45%	0.365%
84	10.875	969	970	974	rBV4	8890	8041	5.14%	0.544%
85	11.068	1003	1006	1012	rBV8	13432	12160	7.77%	0.822%

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	11.265	1037	1043	1047	rBV9	17011	25723	16.44%	1.739%
87	11.442	1072	1076	1080	rBV7	22924	27508	17.58%	1.860%
88	11.512	1087	1089	1094	rBV5	16075	16817	10.75%	1.137%
89	11.565	1097	1099	1102	rVV4	7771	6436	4.11%	0.435%
90	11.624	1108	1110	1113	rVB3	7623	5724	3.66%	0.387%
91	11.661	1114	1117	1120	rBV5	10212	9205	5.88%	0.622%
92	11.704	1122	1125	1129	rBV4	27697	25297	16.17%	1.710%
93	11.966	1171	1174	1176	rBV4	22509	17104	10.93%	1.156%
94	12.030	1184	1186	1191	rBV6	10836	13780	8.81%	0.932%
95	12.266	1228	1230	1232	rBV3	15930	15742	10.06%	1.064%
96	12.389	1250	1253	1256	rVB5	44759	39113	25.00%	2.645%
97	12.731	1307	1317	1321	rBV5	30360	76429	48.84%	5.168%
98	12.768	1321	1324	1327	rBV5	23423	33159	21.19%	2.242%
99	12.998	1365	1367	1369	rBV3	23792	20090	12.84%	1.358%
100	17.769	2257	2259	2275	rVB3	50424	156479	100.00%	10.580%

Sum of corrected areas: 1478998

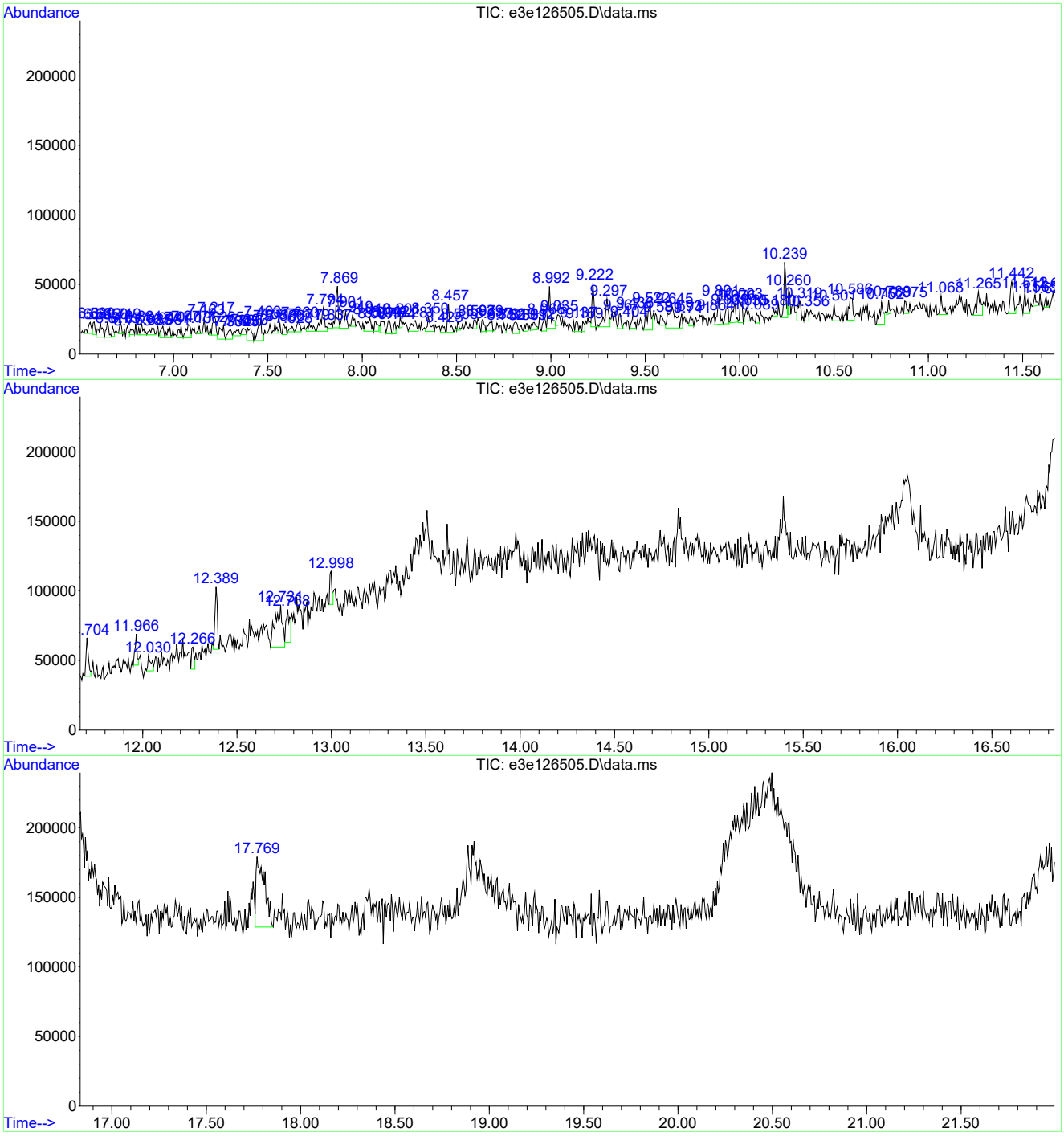
7.2.1
7

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

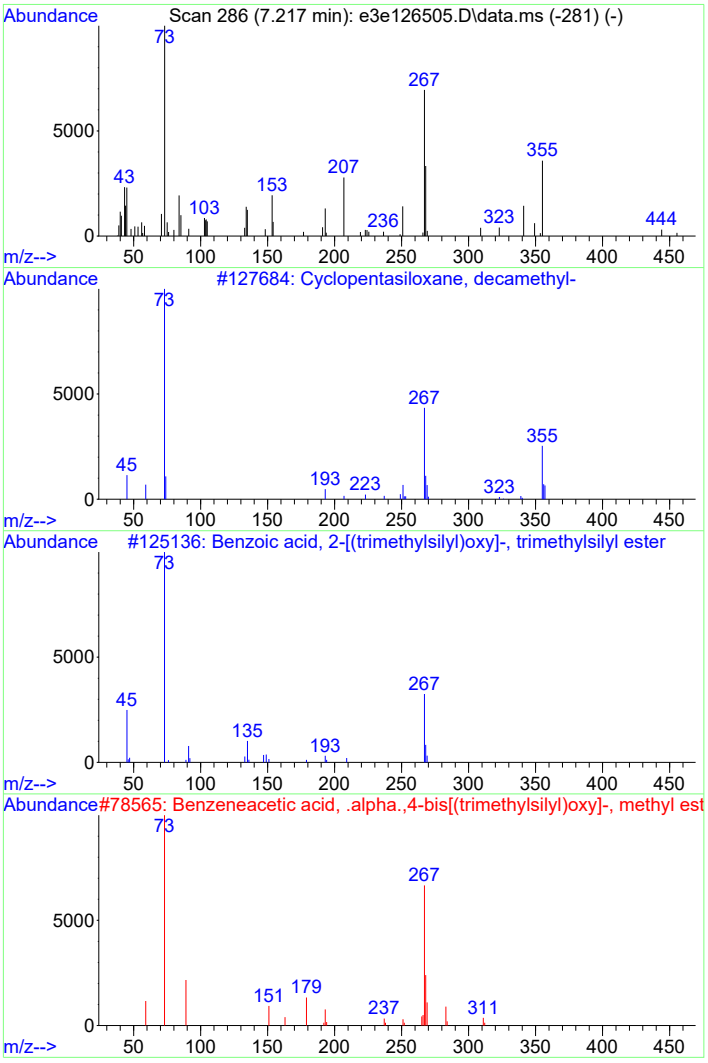
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

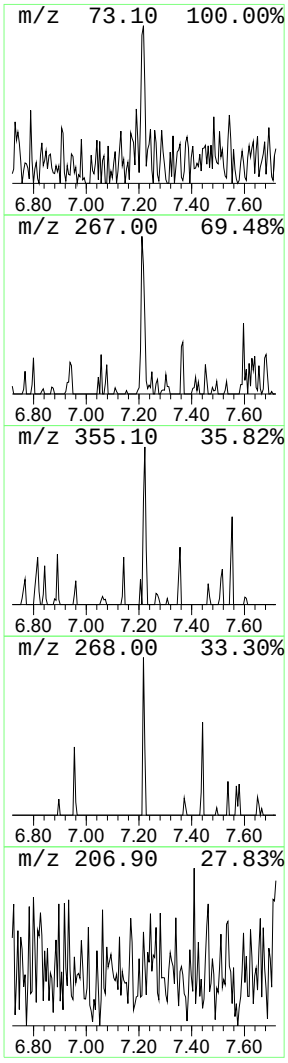
****

Peak Number 17 Siloxane Concentration Rank 27

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.217	0.00	16537	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentasiloxane, decamethyl-	370	C10H30O5Si5	000541-02-6	25
2	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	22
3	Benzeneacetic acid, .alpha.,4-bi...	326	C15H26O4Si2	055334-40-2	17
4	3,6-Bis(N,N-dimethylamino)-9-met...	267	C17H21N3	119046-55-8	14
5	Benzoic acid, 2-[(trimethylsilyl...	282	C13H22O3Si2	003789-85-3	10





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

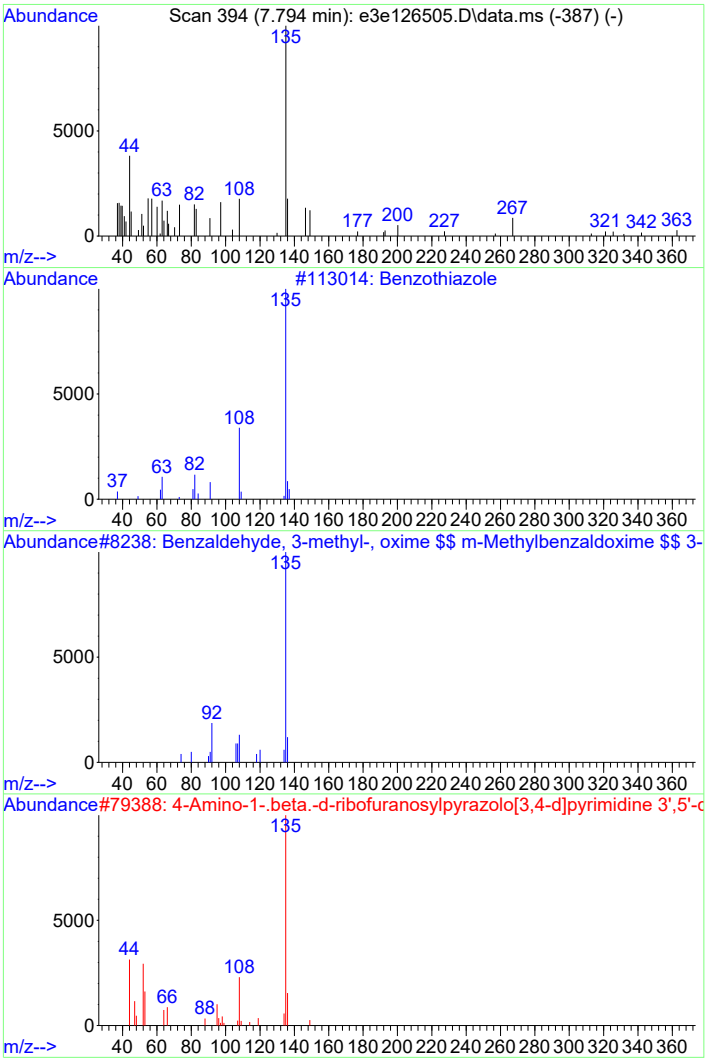
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

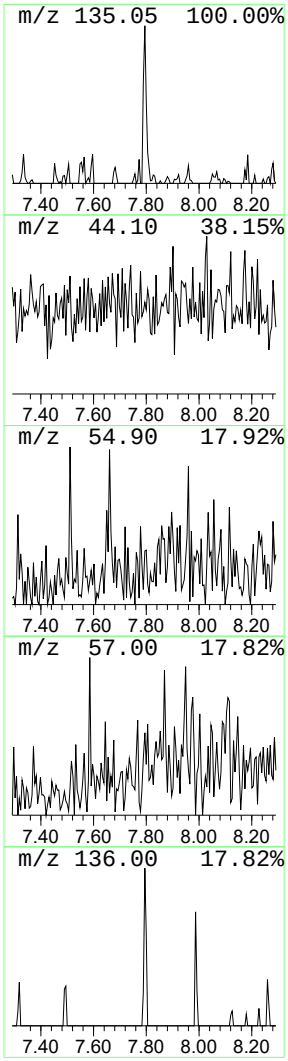
****

Peak Number 30 Benzothiazole Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.794	0.00	24597	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzothiazole	135	C7H5NS	000095-16-9	47
2	Benzaldehyde, 3-methyl-, oxime $...	135	C8H9NO	041977-54-2	45
3	4-Amino-1-.beta.-d-ribofuranosyl...	329	C10H12N5O6P	000000-00-0	38
4	3,5-Dihydroxybenzonitrile	135	C7H5NO2	000000-00-0	37
5	Dimethylphosphinothioic azide	135	C2H6N3PS	027260-90-8	37





(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

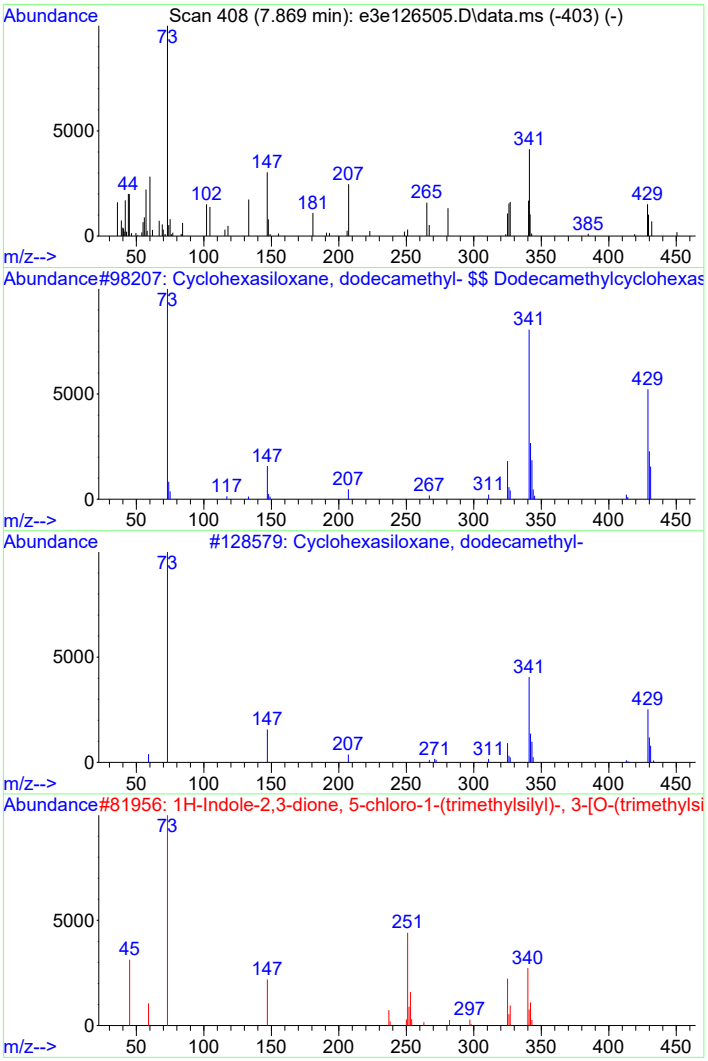
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

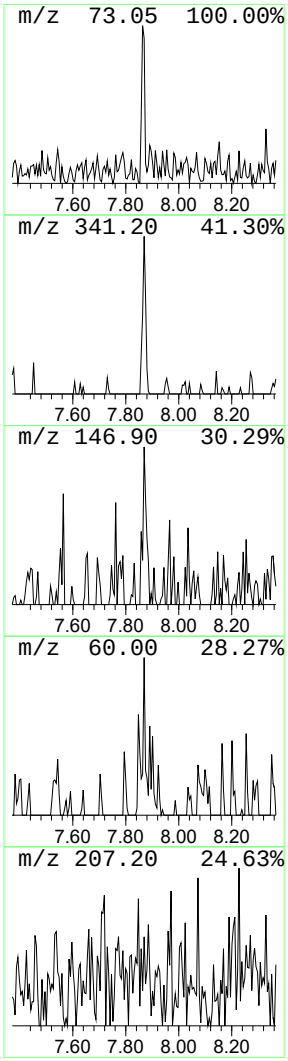
****

Peak Number 32 Siloxane Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.869	0.00	25624	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexasiloxane, dodecamethyl-...	444	C12H36O6Si6	000540-97-6	47
2	Cyclohexasiloxane, dodecamethyl-	444	C12H36O6Si6	000540-97-6	38
3	1H-Indole-2,3-dione, 5-chloro-1-...	340	C14H21ClN2O2Si2	000000-00-0	14
4	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	10
5	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	9





Library Search Compound Report

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Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

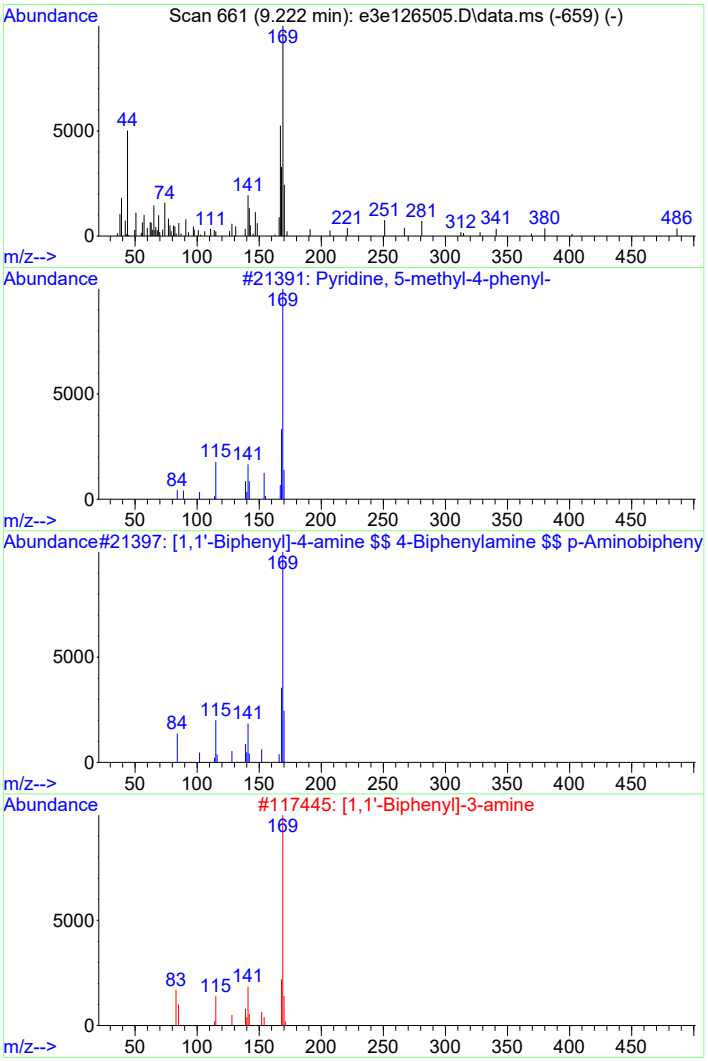
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

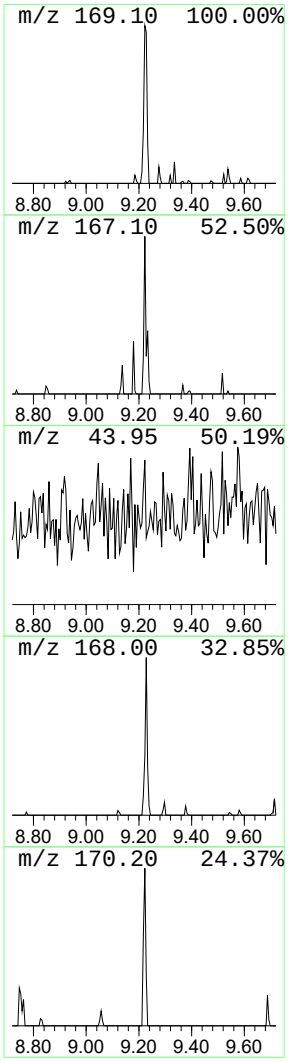
****

Peak Number 58 Diphenylamine Concentration Rank 17

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.222	0.00	22944	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pyridine, 5-methyl-4-phenyl-	169	C12H11N	002052-92-8	43
2	[1,1'-Biphenyl]-4-amine $$ 4-Bip...	169	C12H11N	000092-67-1	43
3	[1,1'-Biphenyl]-3-amine	169	C12H11N	002243-47-2	40
4	Diphenylamine $$ Benzenamine, N-...	169	C12H11N	000122-39-4	35
5	Benzeneacetamide, 4-methyl-N,N-d...	301	C21H19NO	055955-87-8	25





Library Search Compound Report

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Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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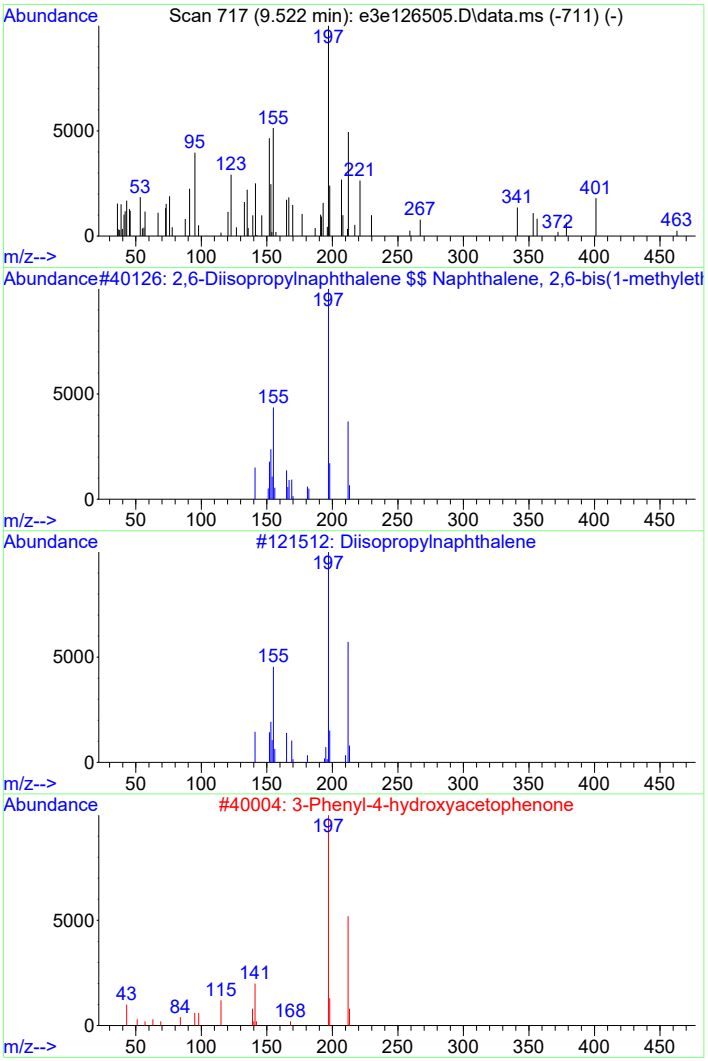
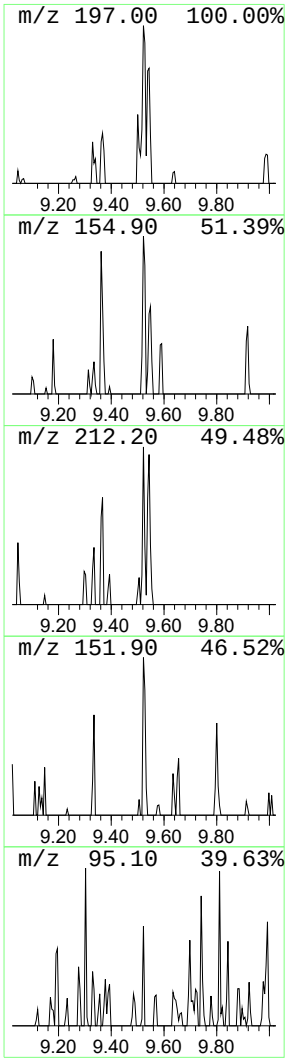
Peak Number 63 Diisopropylnaphthalene Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.522	0.00	30119	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	52
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	47
3	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	38
4	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	38
5	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	35





7.2.1

7

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

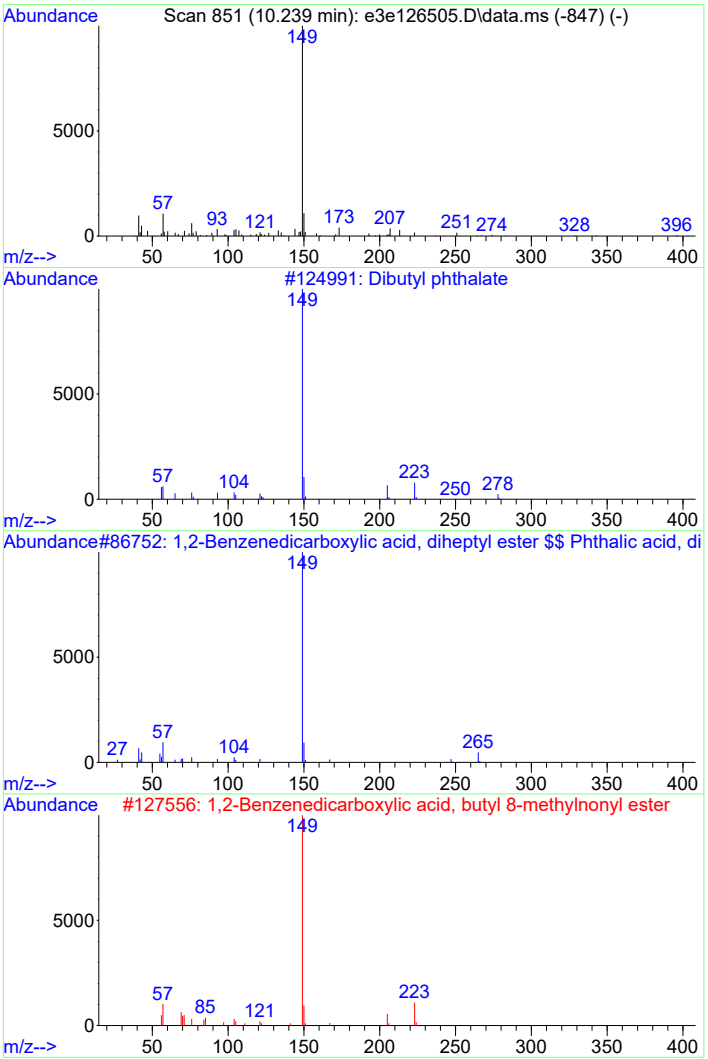
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

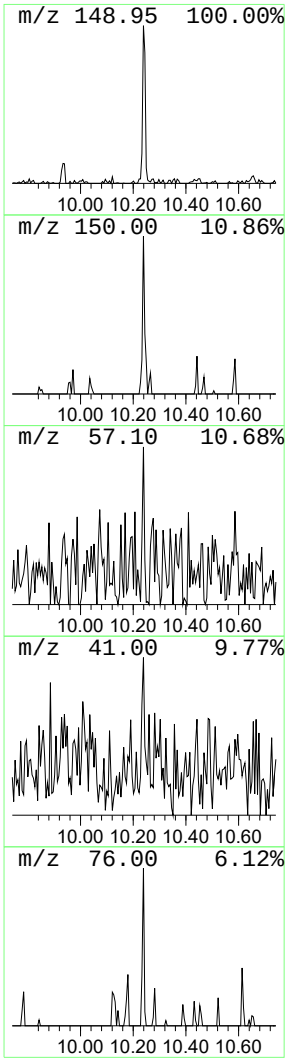
****

Peak Number 76 Phthalate Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.239	0.00	32371	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dibutyl phthalate	278	C16H22O4	000084-74-2	64
2	1,2-Benzenedicarboxylic acid, di...	362	C22H34O4	003648-21-3	64
3	1,2-Benzenedicarboxylic acid, bu...	362	C22H34O4	000089-18-9	64
4	1,2-Benzenedicarboxylic acid, bu...	278	C16H22O4	017851-53-5	59
5	1,2-Benzenedicarboxylic acid, bu...	304	C18H24O4	000084-64-0	59





Library Search Compound Report

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Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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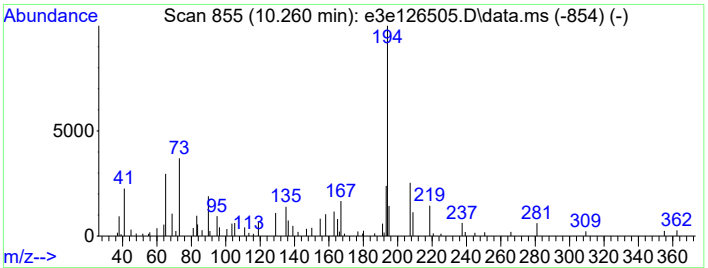
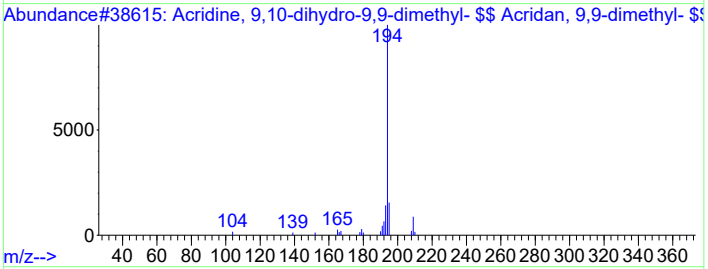
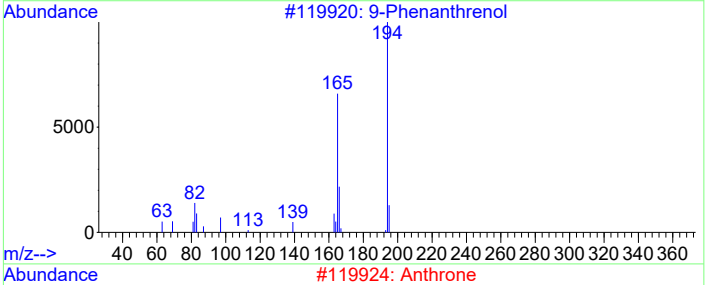
Peak Number 77 Phenanthrenol Concentration Rank 48

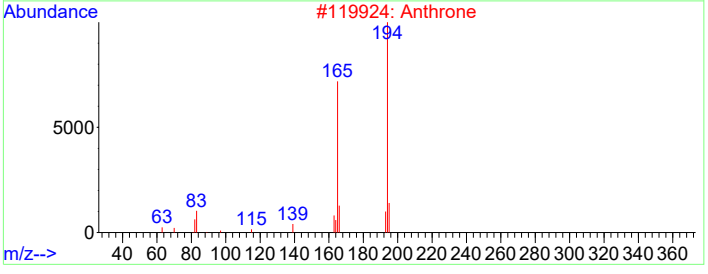
R.T.	EstConc	Area	Relative to ISTD	R.T.
10.260	0.00	10739	External Standard	0.000

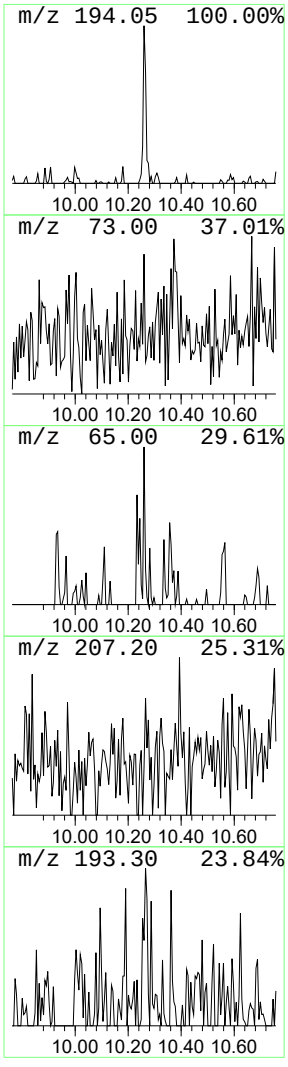
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Acridine, 9,10-dihydro-9,9-dimet...	209	C15H15N	006267-02-3	47
2	9-Phenanthrenol	194	C14H10O	000484-17-3	43
3	Anthrone	194	C14H10O	000090-44-8	43
4	9-Phenanthrenol	194	C14H10O	000484-17-3	43
5	3(2H)-Benzofuranone, 4,6-dimetho...	194	C10H10O4	004225-35-8	40











Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

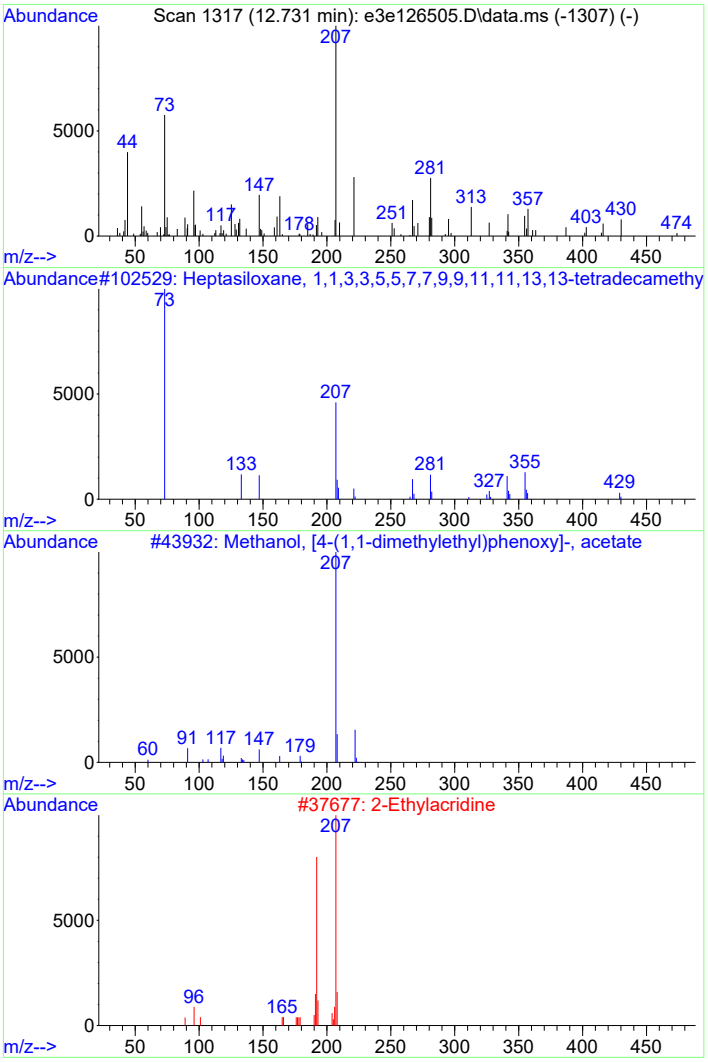
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

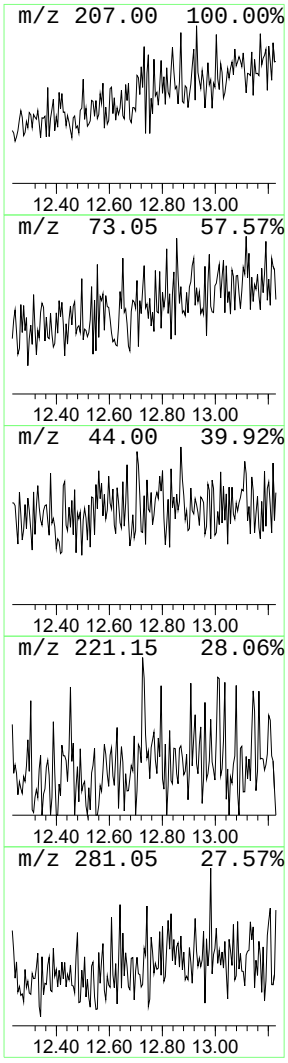
****

Peak Number 97 Siloxane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.731	0.00	76429	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Heptasiloxane, 1,1,3,3,5,5,7,7,9...	504	C14H44O6Si7	019095-23-9	25
2	Methanol, [4-(1,1-dimethylethyl)...	222	C13H18O3	054889-98-4	25
3	2-Ethylacridine	207	C15H13N	000000-00-0	12
4	Corydaldine	207	C11H13NO3	000493-49-2	12
5	trans-3-Ethoxy-b-methyl-b-nitros...	207	C11H13NO3	023037-46-9	9





Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126505.D
Acq On : 9 Jan 2025 1:29 pm
Operator : (b) (6)
Sample : op60797-mb1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Siloxane	7.217	0.0		16537	0	0.000	1	1.0
Benzothiazole	7.794	0.0		24597	0	0.000	1	1.0
Siloxane	7.869	0.0		25624	0	0.000	1	1.0
Diphenylamine	9.222	0.0		22944	0	0.000	1	1.0
Diisopropylnaph...	9.522	0.0		30119	0	0.000	1	1.0
Phthalate	10.239	0.0		32371	0	0.000	1	1.0
Phenanthrenol	10.260	0.0		10739	0	0.000	1	1.0
Siloxane	12.731	0.0		76429	0	0.000	1	1.0

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 10 09:54:44 2025
Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE

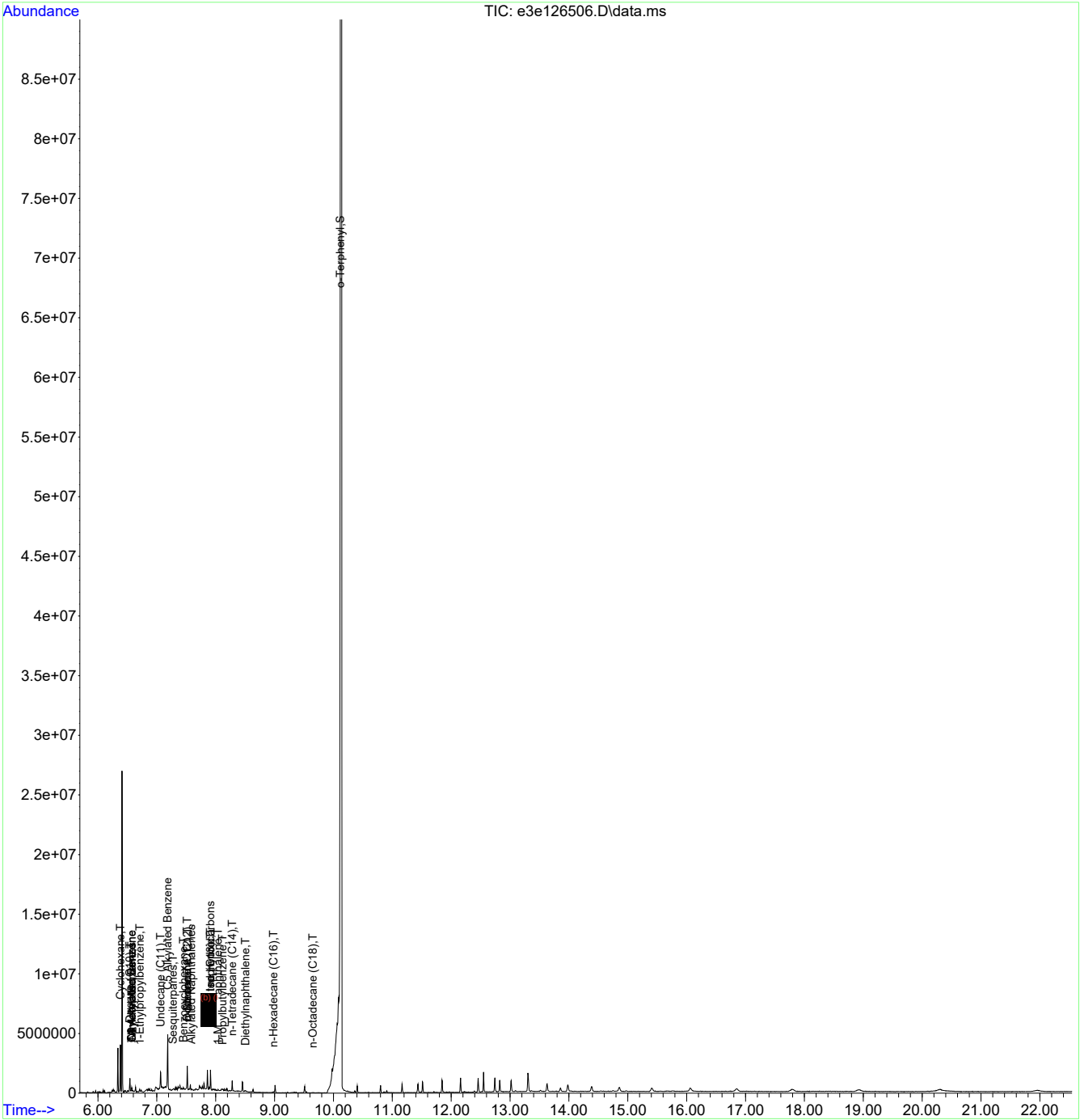
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
System Monitoring Compounds						
26) o-Terphenyl	10.116	230	26541916m	26541916.00		0.00
Target Compounds						Qvalue
1) Undecane (C11)	7.062	57	442787m	442787.00		
2) Diethylnaphthalene	8.506	141	6342	6342.00	#	100
3) 1-Methylnaphthalene	8.040	142	16523	16523.00	#	100
4) 1-Ethylpropylbenzene	6.709	91	5850	5850.00	#	100
5) Cyclohexane	6.382	84	6541	6541.00	#	100
6) Tridecane (C13)	7.912	57	214595	214595.00	#	1
7) Dodecane (C12)	7.516	43	345722m	345722.00		
8) Sesquiterpanes	7.275	123	193455m	193455.00		
9) Benzocyclohexane	7.452	104	13710	13710.00	#	100
10) Propylbutylbenzene	8.115	176	35273m	35273.00		
11) Cyclic Isoprenoid	7.912	113	147143m	147143.00		
12) Trimethylbenzene	6.575	105	56973	56973.00	#	100
13) Saturated Hydrocarbons	7.912	85	70321	70321.00 ug/l	#	100
14) Alkylated Benzenes	6.575	78	14582m	14582.00 ug/l		
15) C3 Alkylated Benzene	6.575	105	166522m	166522.00 ug/l		
16) C4 Alkylated Benzene	6.575	105	56973	56973.00 ug/l	#	100
17) C5 Alkylated Benzene	7.185	133	342757m	342757.00 ug/l		
19) Alkylated Naphthalenes	7.586	128	137073m	137073.00 ug/l		
29) n-Alkane	7.516	57	3463943m	3463943.00		
32) n-Decane (C10)	6.543	57	138080	138080.00	#	40
33) n-Dodecane (C12)	7.516	57	377757m	377757.00		
34) n-Tetradecane (C14)	8.281	57	112159	112159.00	#	80
35) n-Hexadecane (C16)	8.982	57	12020	12020.00	#	28
36) n-Octadecane (C18)	9.650	57	6373	6373.00	#	60

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 10 09:54:44 2025
Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration
QLast Update : Wed Jan 01 06:29:03 2025
Response via : Initial Calibration
Integrator: RTE



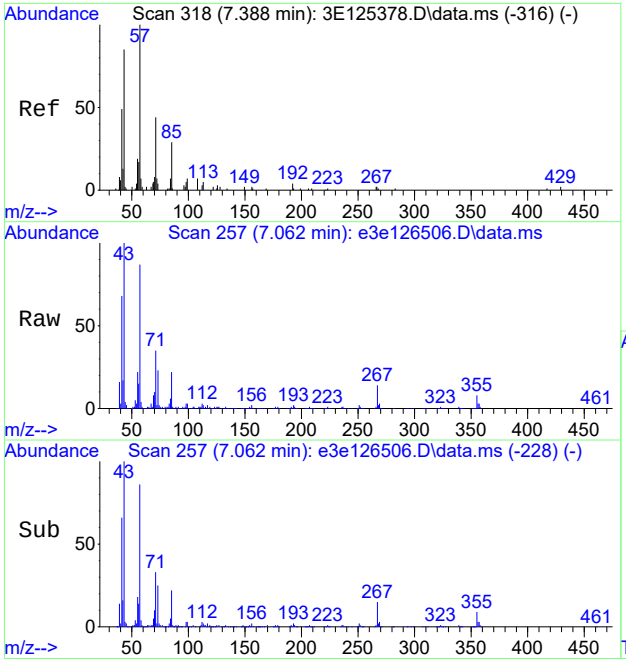
AECOM_e3g_TPHEXT.M Fri Jan 10 10:36:24 2025 Page: 2

(b) (4)

DA69665T

7.3.1

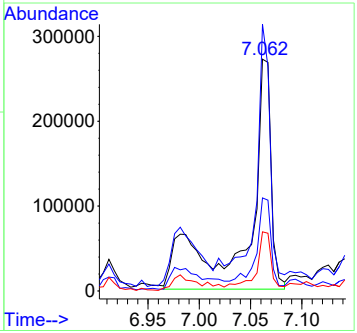
7

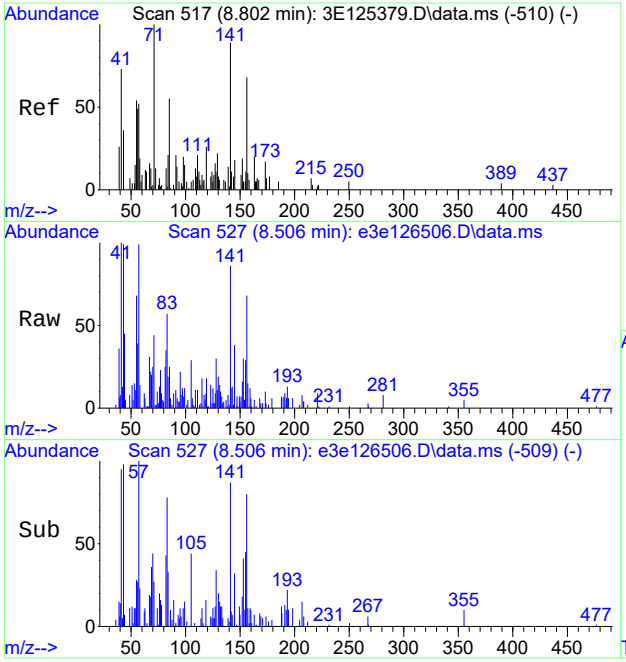


#1
Undecane (C11)
Concen: 442787.00 m
RT: 7.062 min Scan# 257
Delta R.T. 0.054 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 442787

Ion	Ratio	Lower	Upper
57	100		
43	28.8	0.0	35.7
71	13.8	0.0	26.9
85	5.7	0.0	20.0

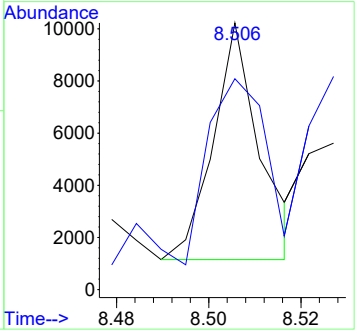




#2
Diethylnaphthalene
Concen: 6342.00
RT: 8.506 min Scan# 527
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:141 Resp: 6342

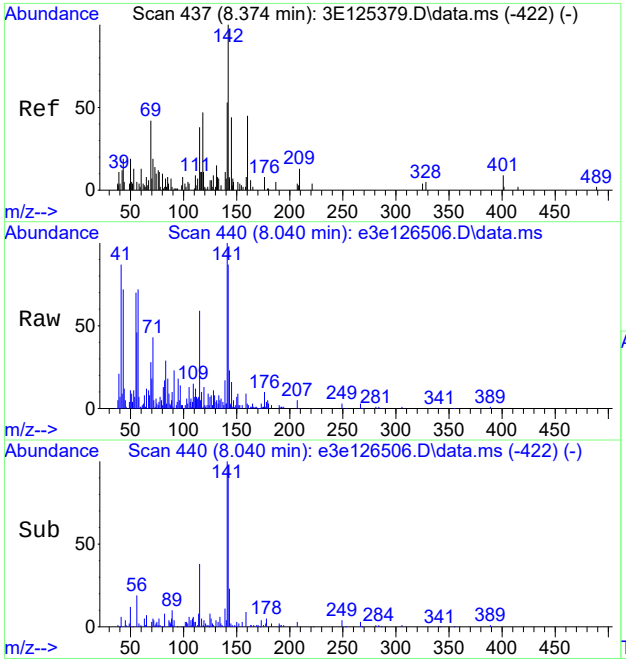
Ion	Ratio	Lower	Upper
141	100		
156	128.2	0.0	20.0#



(b) (4)

7.3.1

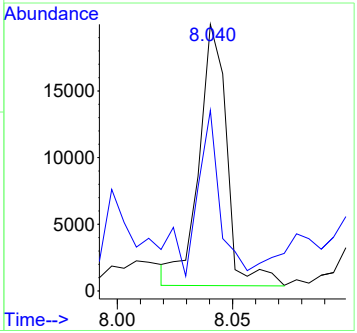
7

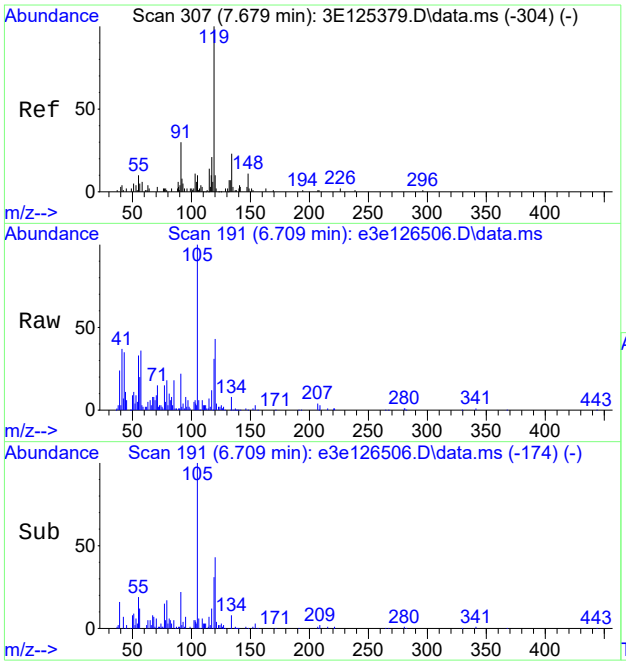


#3
1-Methylnaphthalene
Concen: 16523.00
RT: 8.040 min Scan# 440
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:142 Resp: 16523

Ion	Ratio	Lower	Upper
142	100		
115	46.9	0.0	20.0#

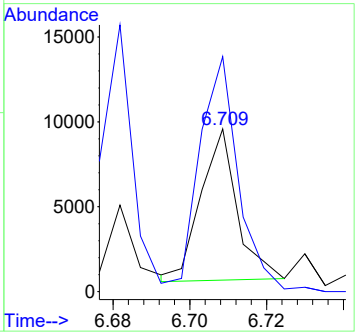


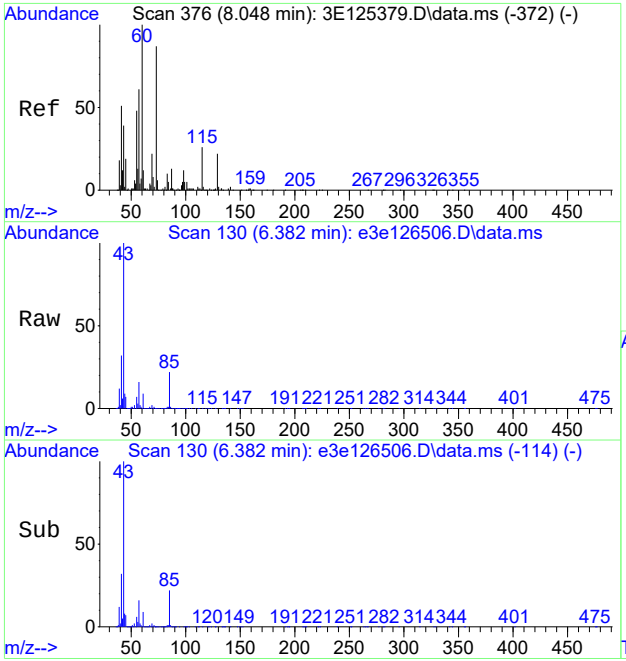


#4
1-Ethylpropylbenzene
Concen: 5850.00
RT: 6.709 min Scan# 191
Delta R.T. -0.011 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 91 Resp: 5850

Ion	Ratio	Lower	Upper
91	100		
119	166.6	0.0	20.0#

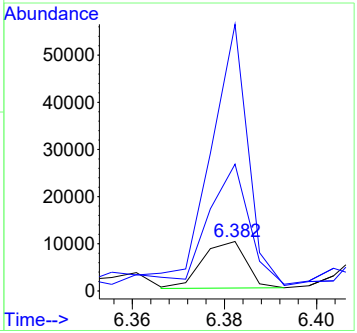


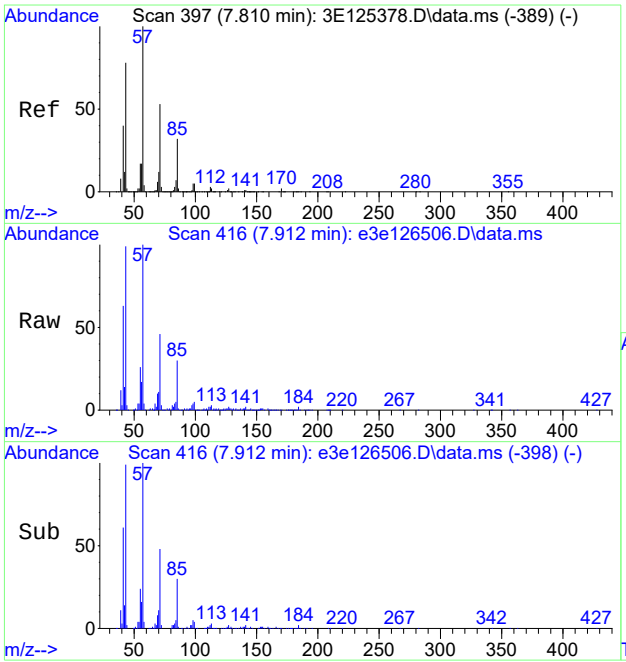


#5
Cyclohexane
Concen: 6541.00
RT: 6.382 min Scan# 130
Delta R.T. -0.016 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 84 Resp: 6541

Ion	Ratio	Lower	Upper
84	100		
56	473.9	0.0	20.0#
69	270.7	0.0	20.0#

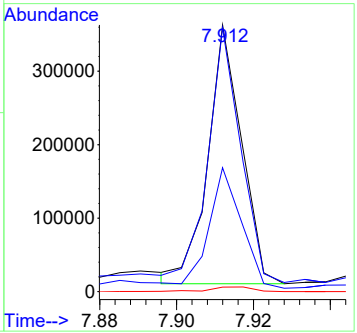


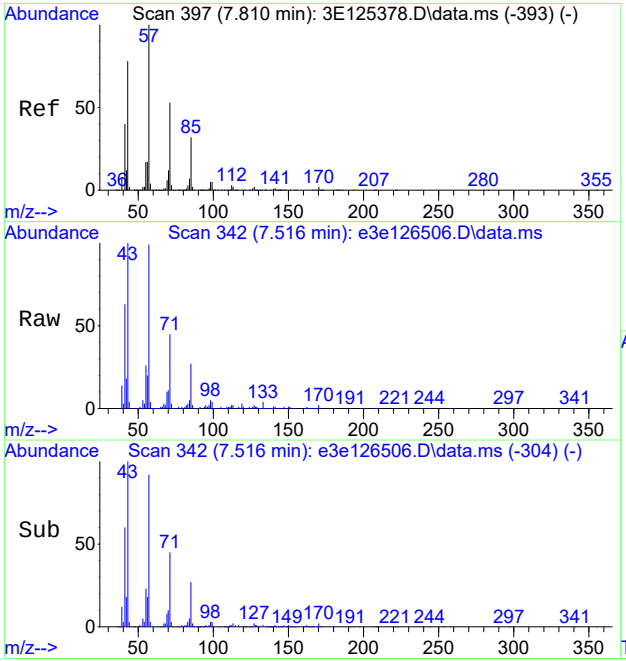


#6
Tridecane (C13)
Concen: 214595.00
RT: 7.912 min Scan# 416
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 214595

Ion	Ratio	Lower	Upper
57	100		
43	95.4	0.0	26.1#
71	44.6	0.0	20.0#
184	2.4	0.0	20.0

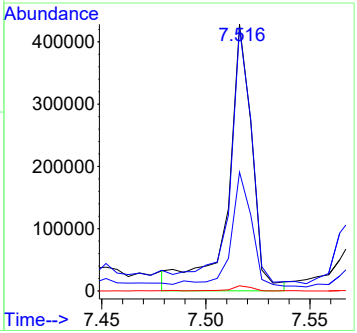


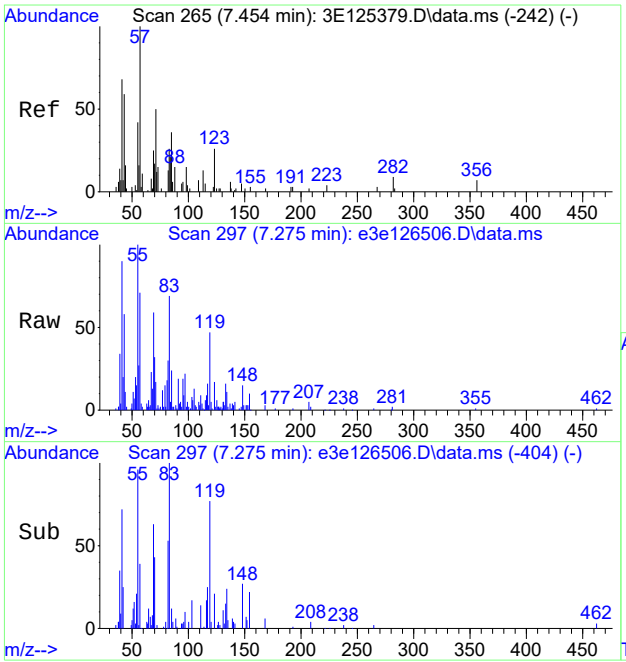


#7
Dodecane (C12)
Concen: 345722.00 m
RT: 7.516 min Scan# 342
Delta R.T. 0.102 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 43 Resp: 345722

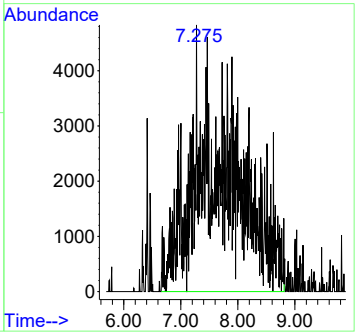
Ion	Ratio	Lower	Upper
43	100		
57	16.4	145.0	185.0#
71	4.5	44.9	84.9#
170	0.0	0.0	20.0

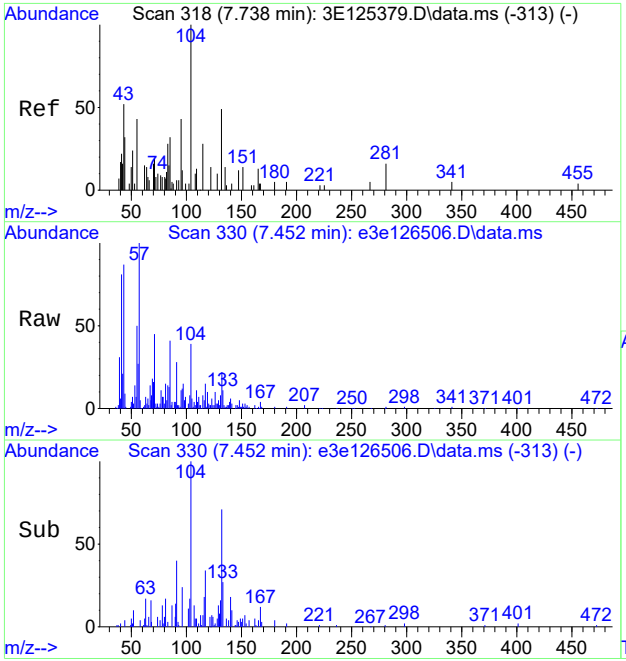




#8
Sesquiterpanes
Concen: 193455.00 m
RT: 7.275 min Scan# 297
Delta R.T. -0.674 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:123 Resp: 193455

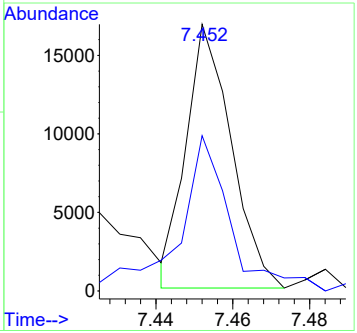


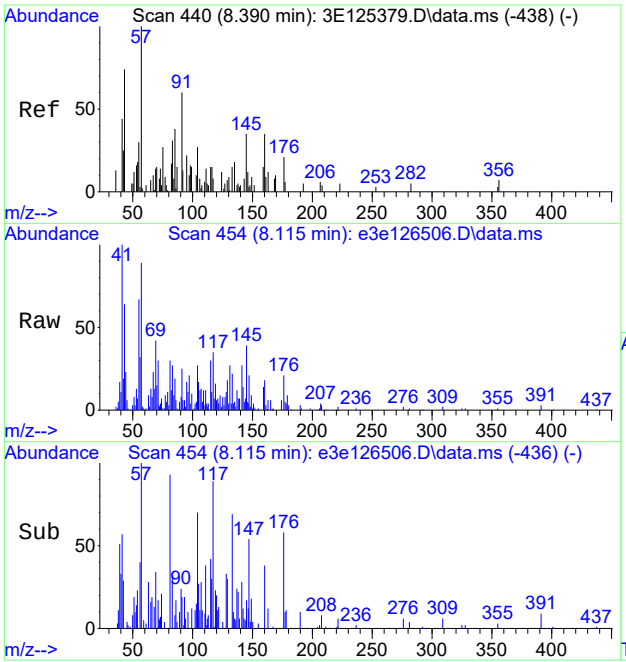


#9
Benzocyclohexane
Concen: 13710.00
RT: 7.452 min Scan# 330
Delta R.T. -0.011 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:104 Resp: 13710

Ion	Ratio	Lower	Upper
104	100		
132	66.2	0.0	20.0#

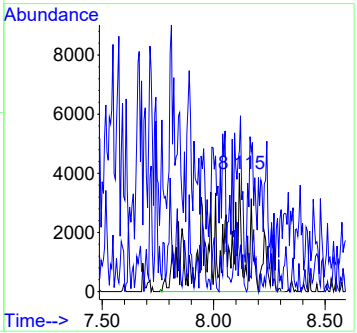


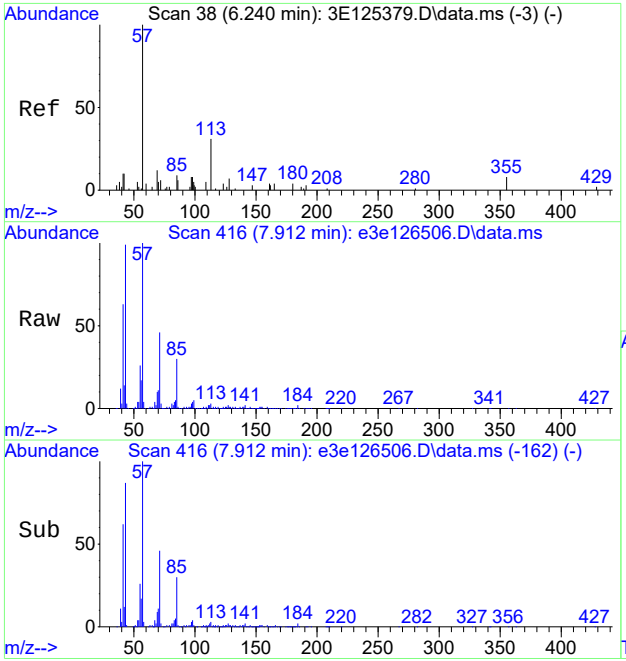


#10
Propylbutylbenzene
Concen: 35273.00 m
RT: 8.115 min Scan# 454
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:176 Resp: 35273

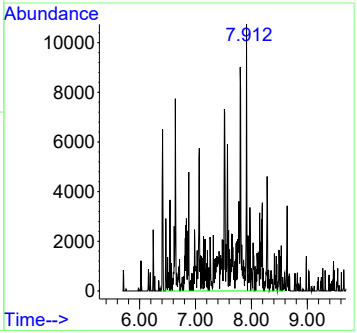
Ion	Ratio	Lower	Upper
176	100		
120	3.6	0.0	0.0#
91	15.5	0.0	0.0#

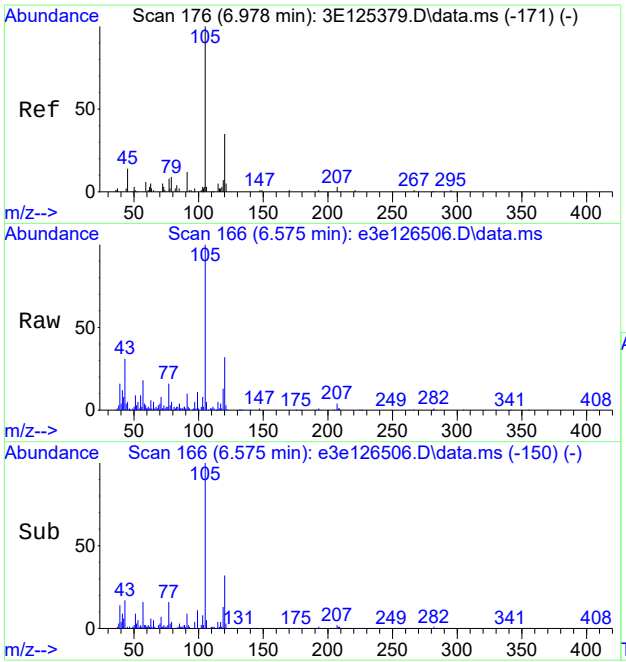




#11
Cyclic Isoprenoid
Concen: 147143.00 m
RT: 7.912 min Scan# 416
Delta R.T. 1.257 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:113 Resp: 147143

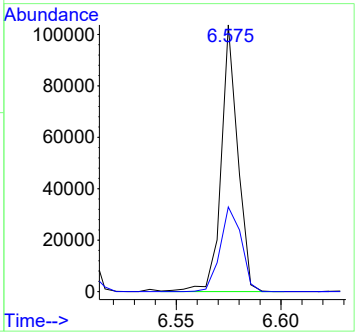


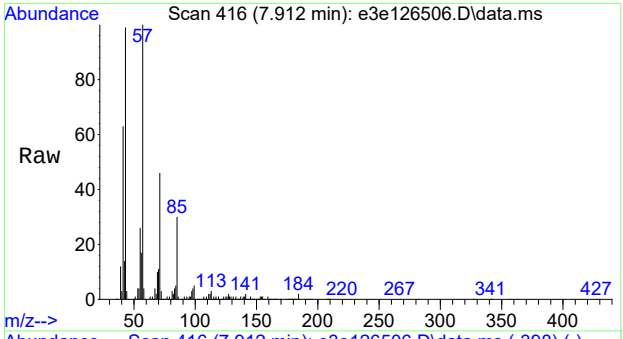


#12
Trimethylbenzene
Concen: 56973.00
RT: 6.575 min Scan# 166
Delta R.T. -0.016 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:105 Resp: 56973

Ion	Ratio	Lower	Upper
105	100		
120	40.7	0.0	0.0#

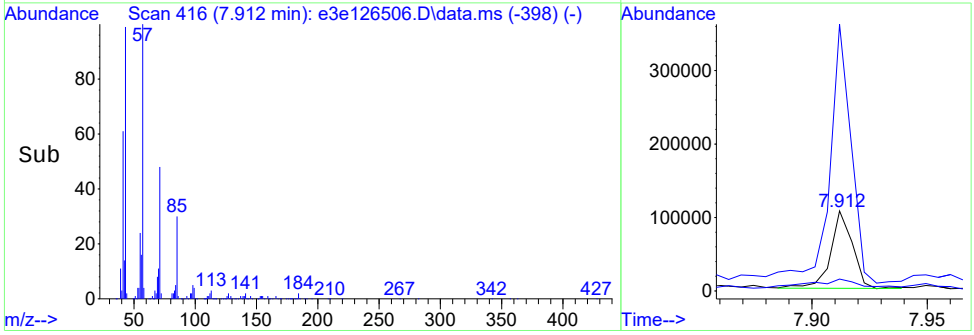


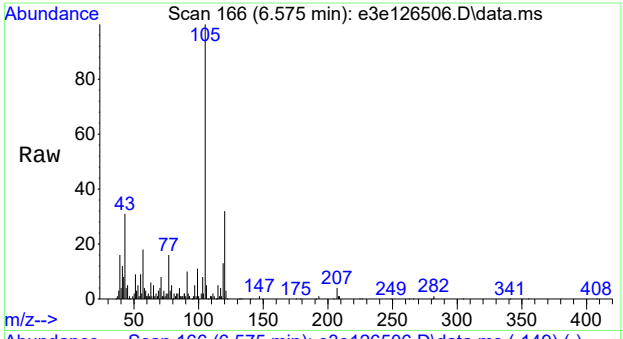


#13
Saturated Hydrocarbons
Concen: 70321.00 ug/l
RT: 7.912 min Scan# 416
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 85 Resp: 70321

Ion	Ratio	Lower	Upper
85	100		
83	24.8	0.0	0.0#
57	331.7	0.0	0.0#

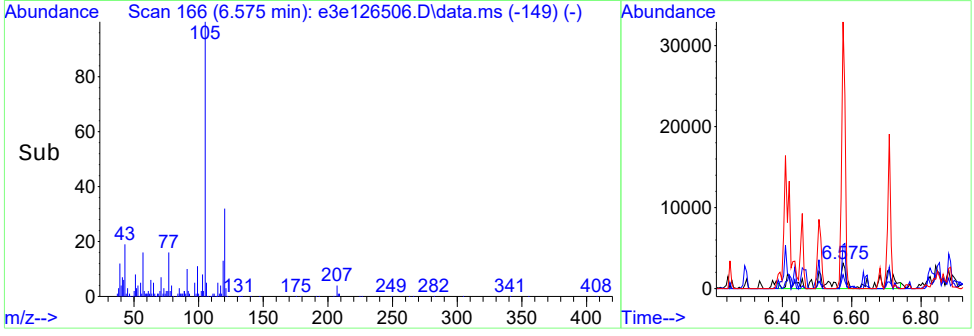


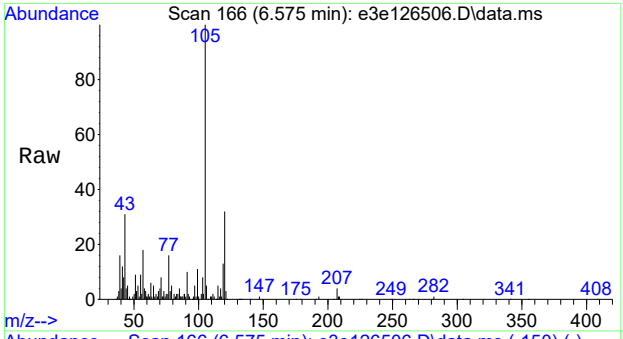


#14
Alkylated Benzenes
Concen: 14582.00 ug/l m
RT: 6.575 min Scan# 166
Delta R.T. -0.011 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 78 Resp: 14582

Ion	Ratio	Lower	Upper
78	100		
92	8.7	0.0	0.0#
106	27.8	0.0	0.0#
120	159.0	0.0	0.0#

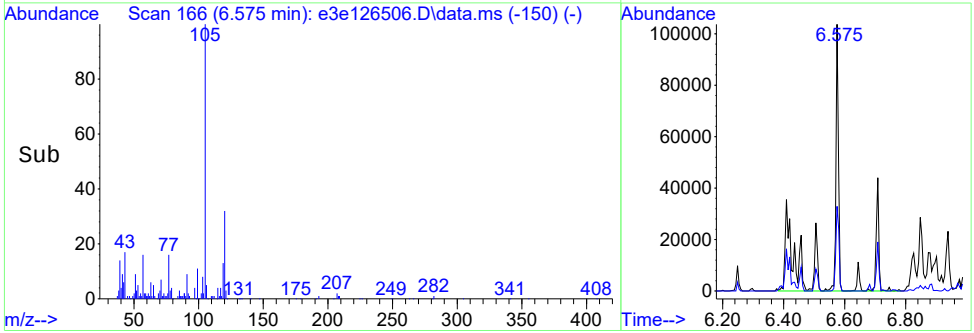


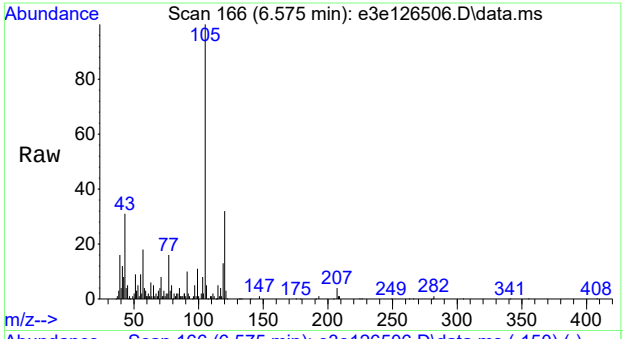


#15
C3 Alkylated Benzene
Concen: 166522.00 ug/l m
RT: 6.575 min Scan# 166
Delta R.T. -0.016 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:105 Resp: 166522

Ion	Ratio	Lower	Upper
105	100		
120	13.9	0.0	0.0#

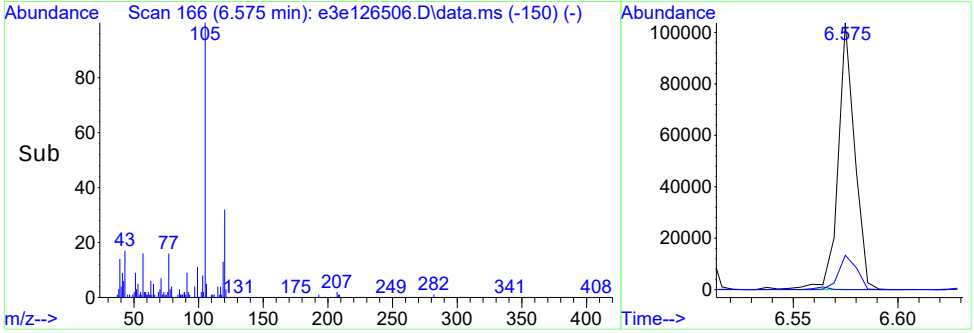


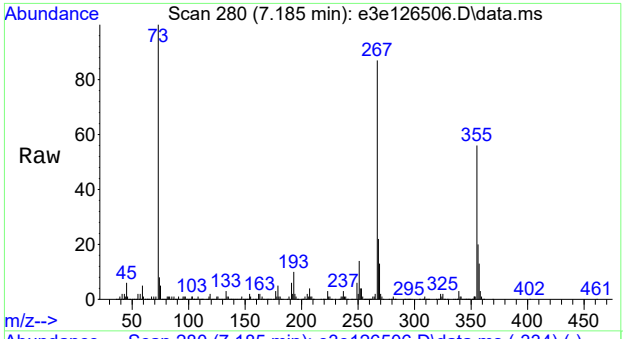


#16
C4 Alkylated Benzene
Concen: 56973.00 ug/l
RT: 6.575 min Scan# 166
Delta R.T. -0.016 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:105 Resp: 56973

Ion	Ratio	Lower	Upper
105	100		
119	14.0	0.0	0.0#
134	0.0	0.0	0.0

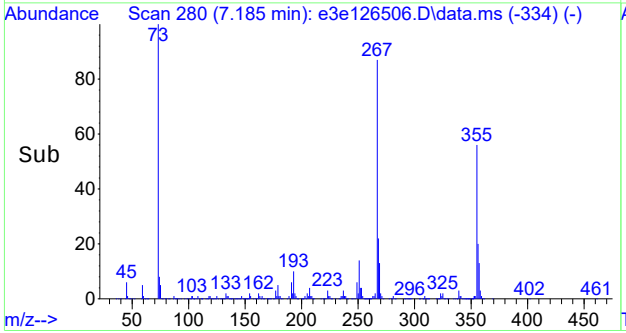


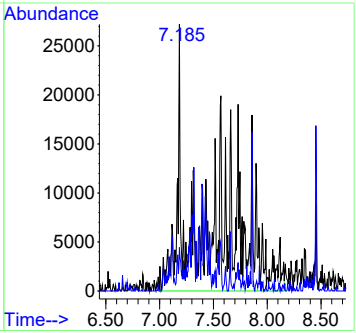


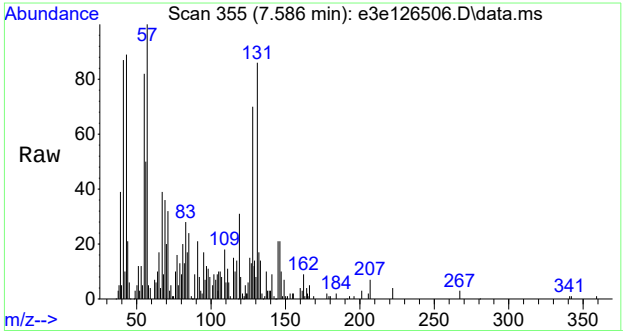
#17
C5 Alkylated Benzene
Concen: 342757.00 ug/l m
RT: 7.185 min Scan# 280
Delta R.T. -0.390 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:133 Resp: 342757

Ion	Ratio	Lower	Upper
133	100		
148	1.6	0.0	0.0#



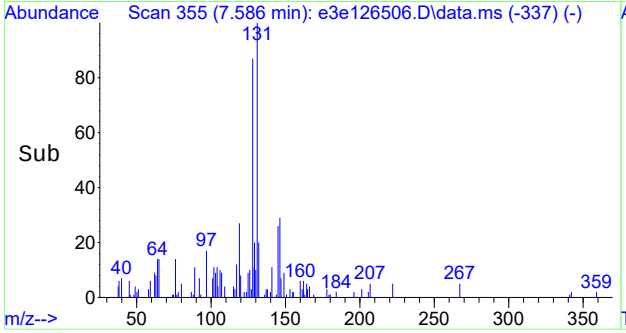


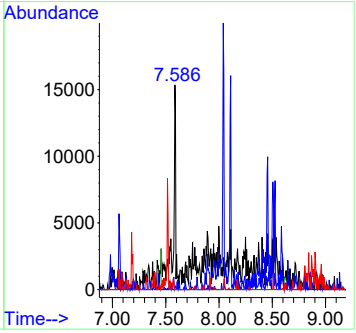


#19
Alkylated Naphthalenes
Concen: 137073.00 ug/l m
RT: 7.586 min Scan# 355
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

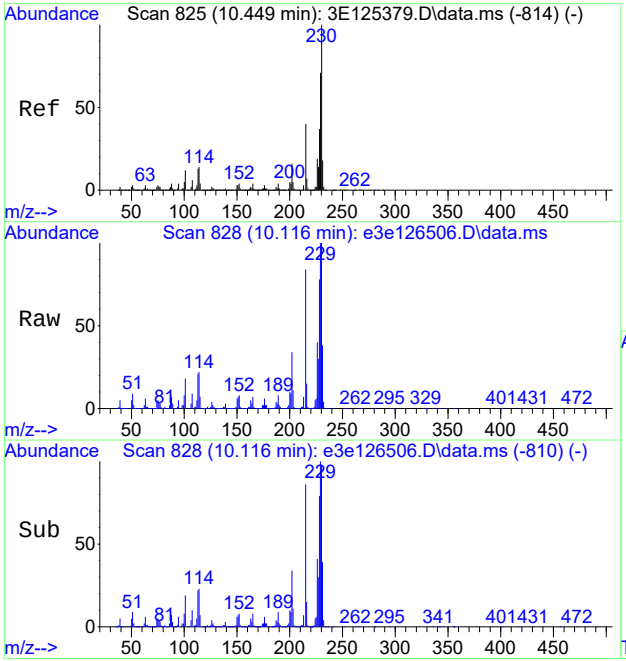
Tgt Ion:128 Resp: 137073

Ion	Ratio	Lower	Upper
128	100		
142	0.0	0.0	0.0
156	0.0	0.0	0.0
170	0.0	0.0	0.0





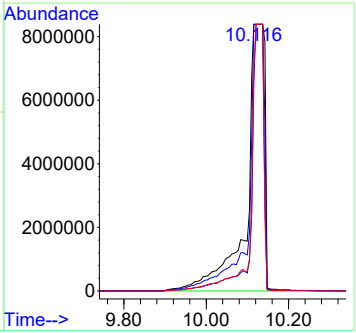
(b) (4)

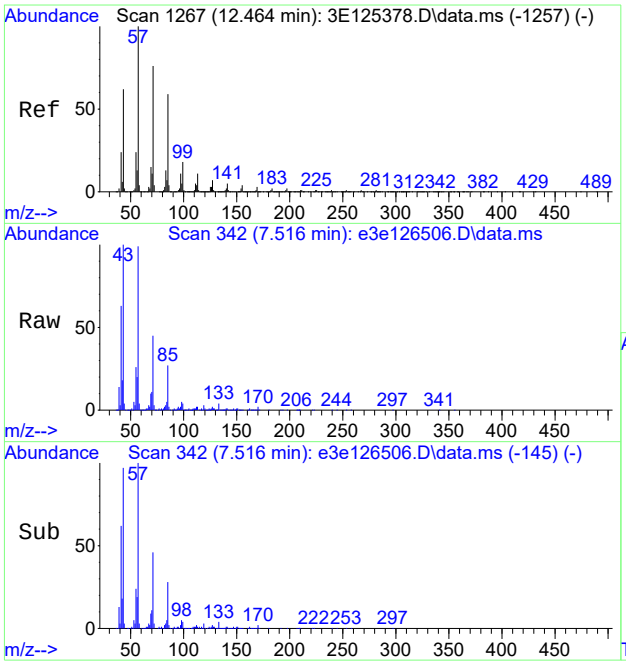


#26
o-Terphenyl
Concen: 26541916.00 m
RT: 10.116 min Scan# 828
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion:230 Resp:26541916

Ion	Ratio	Lower	Upper
230	100		
229	0.0	43.0	83.0#
228	0.0	27.3	67.3#
215	0.0	30.0	70.0#

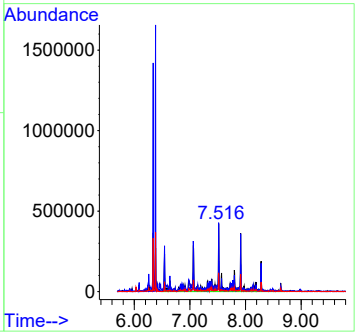




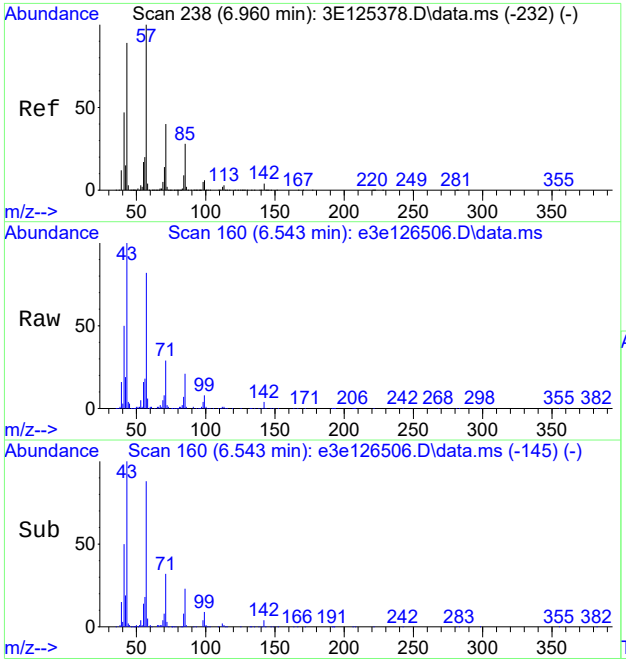
#29
n-Alkane
Concen: 3463943.00 m
RT: 7.516 min Scan# 342
Delta R.T. 0.952 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 3463943

Ion	Ratio	Lower	Upper
57	100		
43	7.2	0.0	20.0
71	2.2	162.1	202.1#
85	1.1	0.0	20.0



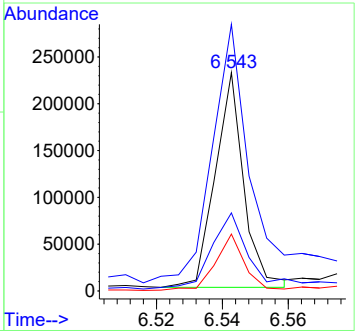
(b) (4)

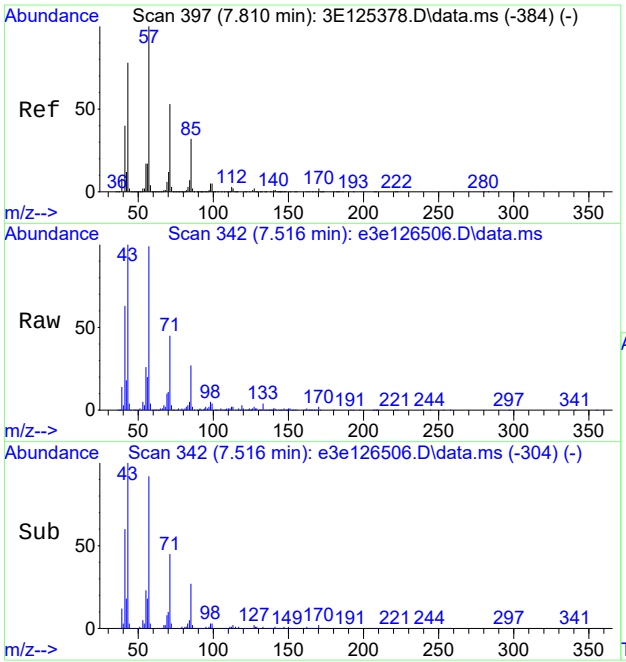


#32
n-Decane (C10)
Concen: 138080.00
RT: 6.543 min Scan# 160
Delta R.T. -0.021 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 138080

Ion	Ratio	Lower	Upper
57	100		
43	179.9	72.3	108.5#
71	51.5	31.3	46.9#
85	26.7	22.2	33.4

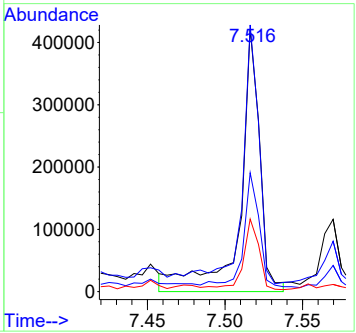


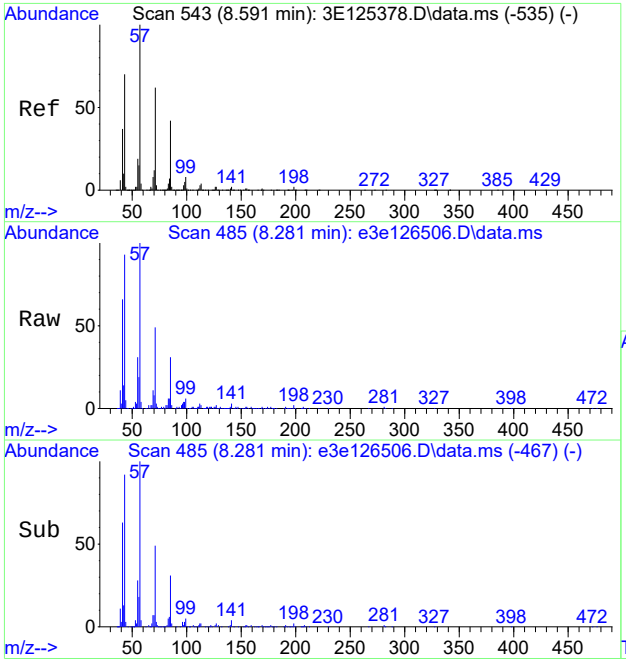


#33
n-Dodecane (C12)
Concen: 377757.00 m
RT: 7.516 min Scan# 342
Delta R.T. 0.102 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 377757

Ion	Ratio	Lower	Upper
57	100		
43	9.0	62.2	93.2#
71	7.3	42.4	63.6#
85	4.2	25.9	38.9#

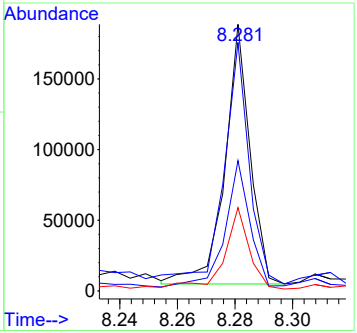


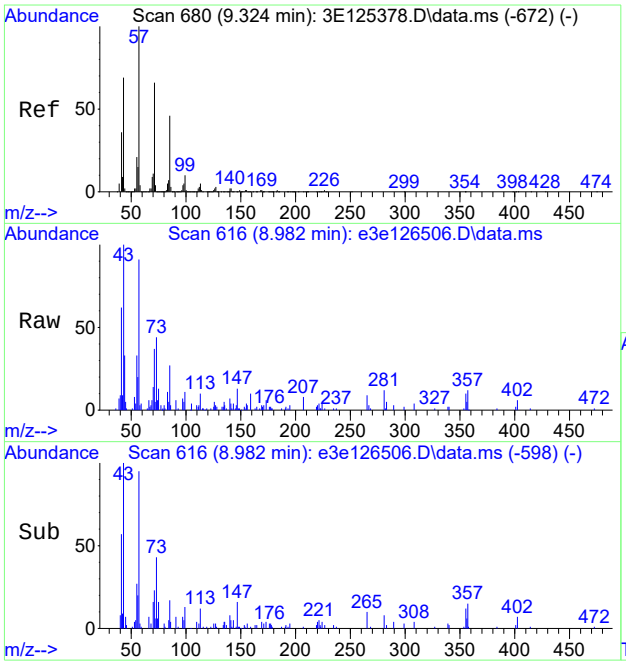


#34
n-Tetradecane (C14)
Concen: 112159.00
RT: 8.281 min Scan# 485
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 112159

Ion	Ratio	Lower	Upper
57	100		
43	93.2	57.6	86.4#
71	48.2	48.6	73.0#
85	31.6	32.5	48.7#

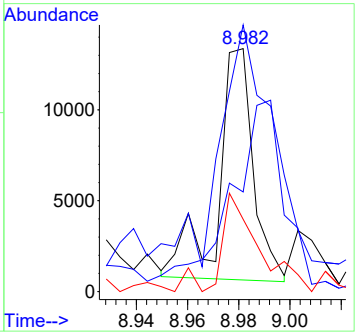




#35
n-Hexadecane (C16)
Concen: 12020.00
RT: 8.982 min Scan# 616
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

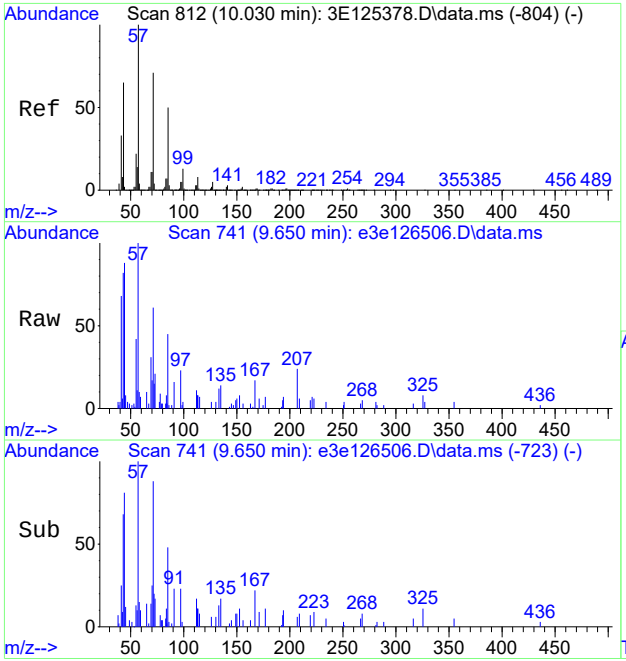
Tgt Ion: 57 Resp: 12020

Ion	Ratio	Lower	Upper
57	100		
43	156.5	54.8	82.2#
71	0.0	52.3	78.5#
85	46.5	36.8	55.2



7.3.1

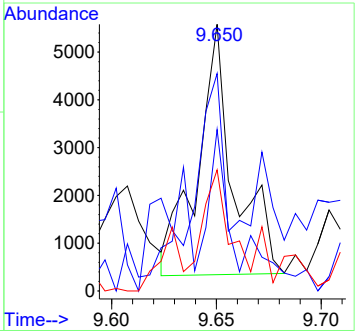
7



#36
n-Octadecane (C18)
Concen: 6373.00
RT: 9.650 min Scan# 741
Delta R.T. -0.005 min
Lab File: e3e126506.D
Acq: 9 Jan 2025 2:03 pm

Tgt Ion: 57 Resp: 6373

Ion	Ratio	Lower	Upper
57	100		
43	43.3	53.4	80.0#
71	24.8	55.1	82.7#
85	25.1	39.5	59.3#



LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

Signal : TIC: e3e126506.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.543	156	160	163	rBV	1104991	697651	0.22%	0.195%
2	6.575	163	166	172	rVB	333399	285499	0.09%	0.080%
3	6.639	173	178	181	rVB2	426628	339162	0.11%	0.095%
4	6.666	181	183	187	rBV3	67717	72648	0.02%	0.020%
5	6.709	187	191	193	rBV4	221425	176448	0.06%	0.049%
6	6.735	193	196	203	rVB4	176516	171375	0.05%	0.048%
7	6.832	203	214	216	rBV4	231102	476064	0.15%	0.133%
8	6.853	216	218	220	rBV3	159280	95691	0.03%	0.027%
9	6.880	220	223	227	rVB2	176807	119713	0.04%	0.033%
10	6.912	227	229	232	rVB2	153679	100059	0.03%	0.028%
11	6.939	232	234	238	rBV4	64211	61168	0.02%	0.017%
12	6.981	238	242	250	rBV4	339530	816731	0.26%	0.228%
13	7.062	250	257	261	rBV2	1484122	1508269	0.48%	0.421%
14	7.185	275	280	286	rVB	4621172	3477380	1.10%	0.971%
15	7.281	293	298	302	rBV7	135982	244921	0.08%	0.068%
16	7.318	302	305	307	rVV2	281039	234212	0.07%	0.065%
17	7.361	311	313	315	rVV	306846	266471	0.08%	0.074%
18	7.393	316	319	322	rVV3	396949	411146	0.13%	0.115%
19	7.420	322	324	328	rVV4	186908	239375	0.08%	0.067%
20	7.452	328	330	335	rVV6	230697	277080	0.09%	0.077%
21	7.516	336	342	346	rVV	2046520	1556308	0.49%	0.435%
22	7.570	349	352	362	rVB2	511683	528166	0.17%	0.148%
23	7.671	366	371	375	rVV6	128175	220220	0.07%	0.062%
24	7.725	377	381	384	rVV2	382487	481943	0.15%	0.135%
25	7.773	388	390	393	rVV	354398	344806	0.11%	0.096%
26	7.800	393	395	401	rVV	593505	624063	0.20%	0.174%
27	7.858	402	406	410	rVV	1692165	1311573	0.41%	0.366%
28	7.912	410	416	421	rVV	1716288	1282505	0.40%	0.358%
29	7.949	421	423	426	rVV3	124413	109673	0.03%	0.031%
30	7.976	426	428	430	rVB2	113339	83792	0.03%	0.023%
31	8.040	437	440	445	rVV5	118124	95190	0.03%	0.027%
32	8.110	449	453	454	rVV3	144055	201786	0.06%	0.056%
33	8.147	458	460	463	rVB3	153643	86399	0.03%	0.024%
34	8.190	463	468	473	rVB	244167	337539	0.11%	0.094%
35	8.238	474	477	480	rVB5	63803	64855	0.02%	0.018%
36	8.281	480	485	488	rBV	873196	532726	0.17%	0.149%
37	8.452	512	517	522	rVB	825853	689203	0.22%	0.193%
38	8.506	522	527	530	rVB6	89766	119217	0.04%	0.033%
39	8.634	548	551	558	rVB	236931	192187	0.06%	0.054%
40	8.752	571	573	577	rVV5	22845	22629	0.01%	0.006%

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

41	8.789	579	580	587	rBV7	17139	27450	0.01%	0.008%
42	8.982	607	616	618	rVV6	83395	137390	0.04%	0.038%
43	9.008	618	621	633	rVB	642269	477571	0.15%	0.133%
44	9.131	640	644	651	rVB10	20781	27557	0.01%	0.008%
45	9.222	657	661	665	rVB3	51925	48873	0.02%	0.014%
46	9.297	670	675	677	rBV5	29652	44805	0.01%	0.013%
47	9.335	677	682	685	rVV4	63290	81681	0.03%	0.023%
48	9.367	685	688	694	rVB5	54650	52478	0.02%	0.015%
49	9.511	710	715	719	rVV2	531987	502331	0.16%	0.140%
50	9.543	719	721	730	rVB2	97332	87908	0.03%	0.025%
51	10.137	783	832	848	rBV4	214984101	316740978	100.00%	88.481%
52	10.362	870	874	877	rBV2	131808	101439	0.03%	0.028%
53	10.404	877	882	886	rVB	562118	434655	0.14%	0.121%
54	10.544	904	908	912	rBV6	19274	25411	0.01%	0.007%
55	10.597	913	918	926	rVB10	48117	78177	0.02%	0.022%
56	10.656	926	929	935	rBV8	17523	34490	0.01%	0.010%
57	10.800	949	956	963	rVB	608373	484900	0.15%	0.135%
58	10.859	963	967	970	rBV5	72277	56543	0.02%	0.016%
59	10.907	970	976	980	rVV	163567	139406	0.04%	0.039%
60	11.164	1017	1024	1032	rBV	725226	647017	0.20%	0.181%
61	11.266	1039	1043	1046	rBV6	18967	27395	0.01%	0.008%
62	11.437	1068	1075	1083	rVV	717618	782801	0.25%	0.219%
63	11.512	1083	1089	1095	rVB	914807	841810	0.27%	0.235%
64	11.619	1102	1109	1111	rBV8	27442	45917	0.01%	0.013%
65	11.710	1122	1126	1130	rVV2	78406	79267	0.03%	0.022%
66	11.747	1130	1133	1142	rVB9	26544	55882	0.02%	0.016%
67	11.843	1142	1151	1159	rBV2	1052528	1011435	0.32%	0.283%
68	11.923	1162	1166	1168	rVV5	37261	31907	0.01%	0.009%
69	11.966	1171	1174	1178	rVB5	51276	49341	0.02%	0.014%
70	12.159	1205	1210	1218	rVB	1211482	994516	0.31%	0.278%
71	12.223	1218	1222	1224	rBV5	66831	59968	0.02%	0.017%
72	12.394	1250	1254	1259	rBV6	91346	85902	0.03%	0.024%
73	12.458	1262	1266	1271	rBV	1160446	1072316	0.34%	0.300%
74	12.523	1275	1278	1280	rVV3	37007	41513	0.01%	0.012%
75	12.549	1280	1283	1291	rVB	1663255	1248466	0.39%	0.349%
76	12.710	1308	1313	1314	rBV5	32423	44258	0.01%	0.012%
77	12.742	1314	1319	1325	rVB2	1179736	1046029	0.33%	0.292%
78	12.827	1329	1335	1340	rBV	949271	848422	0.27%	0.237%
79	13.020	1365	1371	1380	rBV	947143	988865	0.31%	0.276%
80	13.089	1382	1384	1392	rVB6	81178	105674	0.03%	0.030%
81	13.303	1419	1424	1432	rVB2	1546687	1834412	0.58%	0.512%
82	13.362	1432	1435	1443	rBV10	58485	83085	0.03%	0.023%
83	13.517	1461	1464	1468	rBV6	89408	102550	0.03%	0.029%
84	13.630	1479	1485	1495	rVB2	640452	889518	0.28%	0.248%
85	13.785	1511	1514	1519	rVB7	48841	52094	0.02%	0.015%

LSC Area Percent Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Title : 8270C Calibration

86	13.854	1522	1527	1534	rBV3	289898	406406	0.13%	0.114%
87	13.983	1544	1551	1558	rBV2	538499	862504	0.27%	0.241%
88	14.384	1620	1626	1636	rVB4	402115	699167	0.22%	0.195%
89	14.539	1652	1655	1660	rBV7	33695	49040	0.02%	0.014%
90	14.753	1690	1695	1701	rBV9	55792	79057	0.02%	0.022%
91	14.855	1708	1714	1726	rVB3	340220	699856	0.22%	0.196%
92	14.972	1732	1736	1742	rBV9	58319	98153	0.03%	0.027%
93	15.405	1810	1817	1825	rBV5	284640	680563	0.21%	0.190%
94	15.635	1857	1860	1861	rBV3	29058	26502	0.01%	0.007%
95	16.058	1932	1939	1956	rVB4	266477	706803	0.22%	0.197%
96	16.855	2078	2088	2097	rVB8	215420	681525	0.22%	0.190%
97	17.780	2251	2261	2279	rVB8	191012	871297	0.28%	0.243%
98	18.919	2461	2474	2476	rBV8	146980	426008	0.13%	0.119%
99	20.144	2699	2703	2704	rBV4	35107	41488	0.01%	0.012%
100	20.941	2851	2852	2857	rBV5	32871	37753	0.01%	0.011%

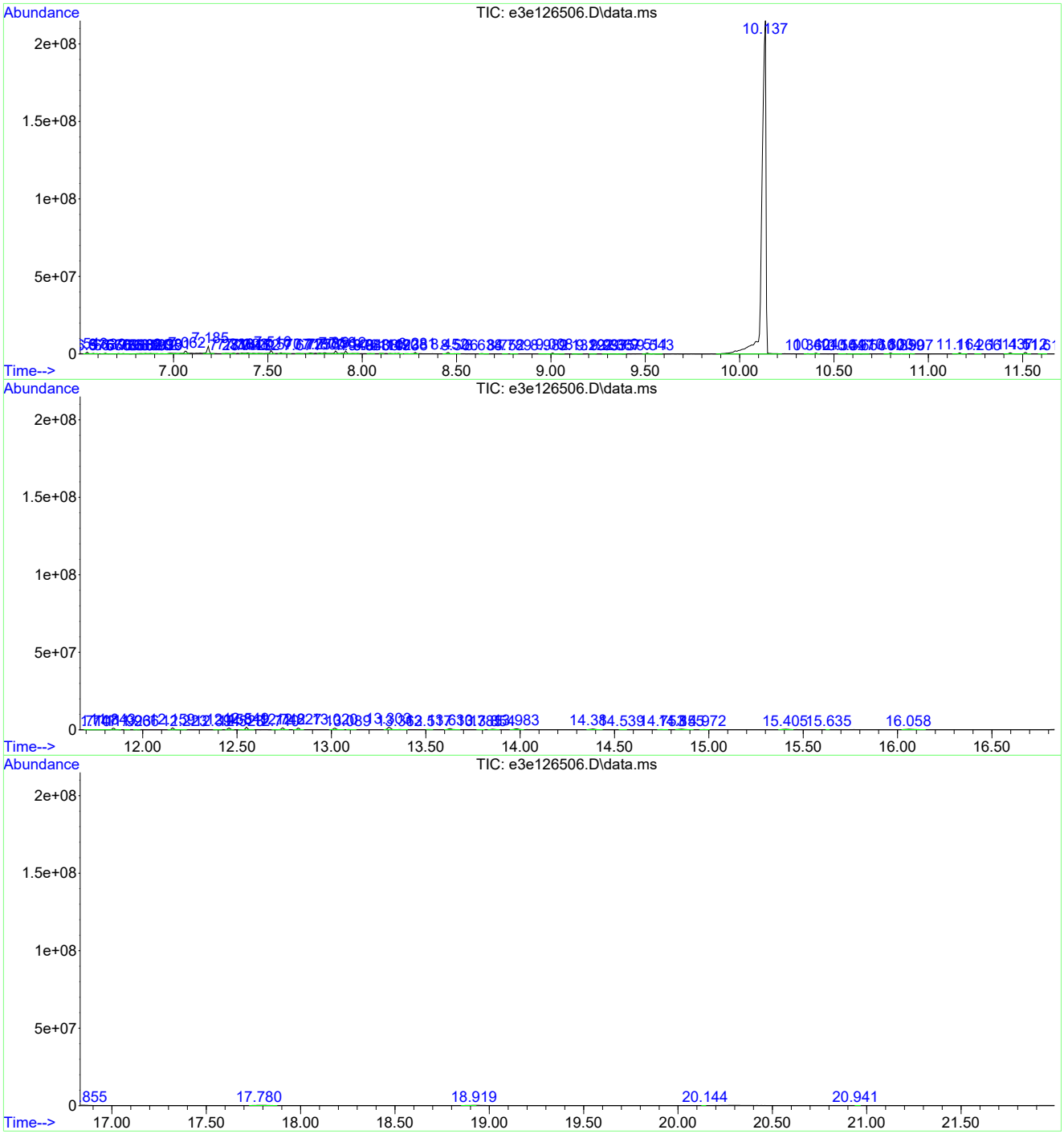
Sum of corrected areas: 357976368

LSC Report - Integrated Chromatogram

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P



(b) (4)

Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

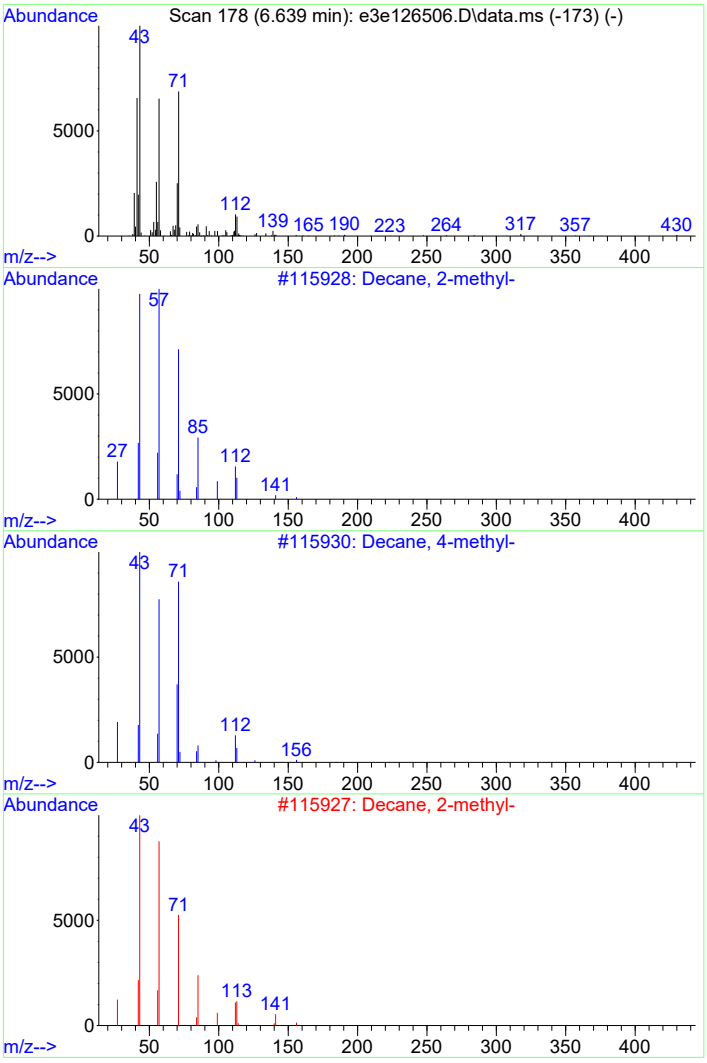
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

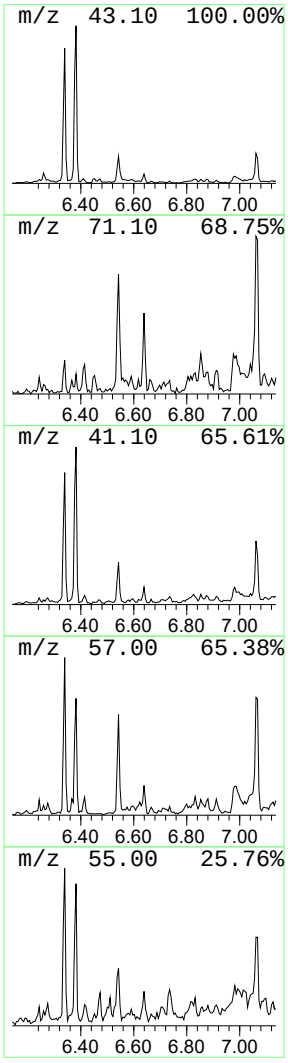
****

Peak Number 1 Alkane Concentration Rank 33

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.639	0.00	339162	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane, 2-methyl-	156	C11H24	006975-98-0	53
2	Decane, 4-methyl-	156	C11H24	002847-72-5	52
3	Decane, 2-methyl-	156	C11H24	006975-98-0	50
4	Octane, 3,3-dimethyl-	142	C10H22	004110-44-5	50
5	Heptane, 3-ethyl-5-methyl- $$ 3-...	142	C10H22	052896-90-9	47





Library Search Compound Report

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

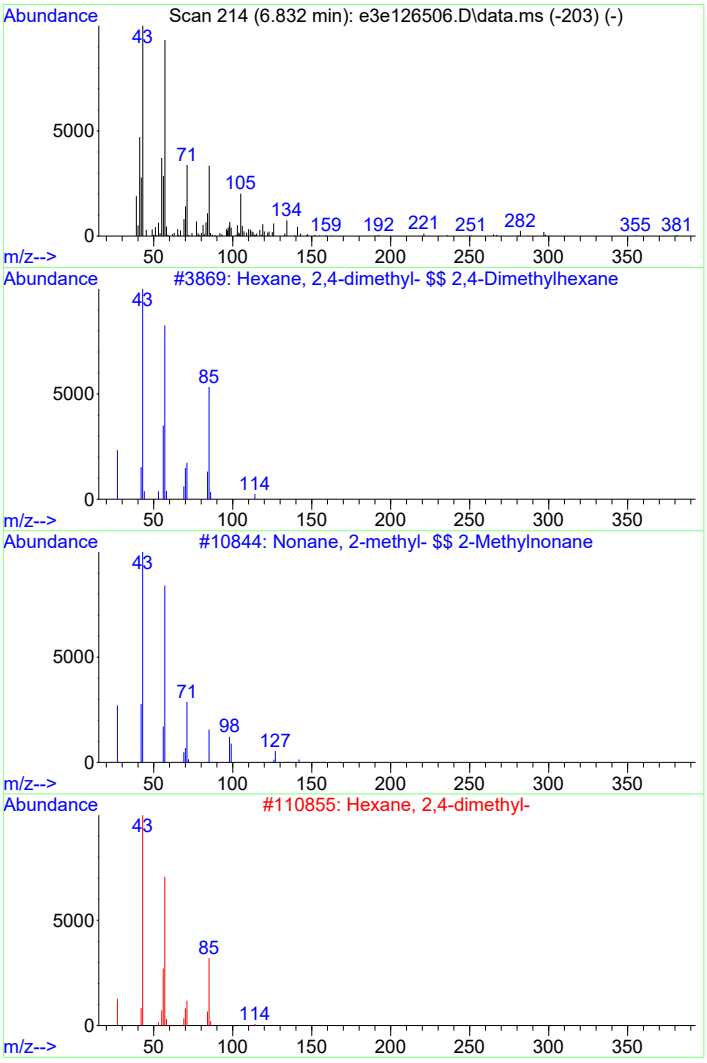
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

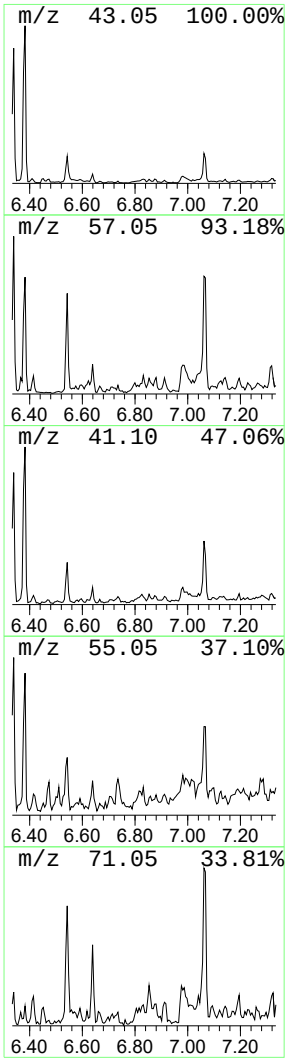
****

Peak Number 2 Alkane Concentration Rank 27

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.832	0.00	476064	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexane, 2,4-dimethyl- $$ 2,4-Dim...	114	C8H18	000589-43-5	49
2	Nonane, 2-methyl- $$ 2-Methylnonane	142	C10H22	000871-83-0	47
3	Hexane, 2,4-dimethyl-	114	C8H18	000589-43-5	46
4	Decane	142	C10H22	000124-18-5	43
5	Octane, 2,4,6-trimethyl-	156	C11H24	062016-37-9	43





AECOM_e3g_TPHEXT.M Fri Jan 10 11:14:43 2025 6

Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

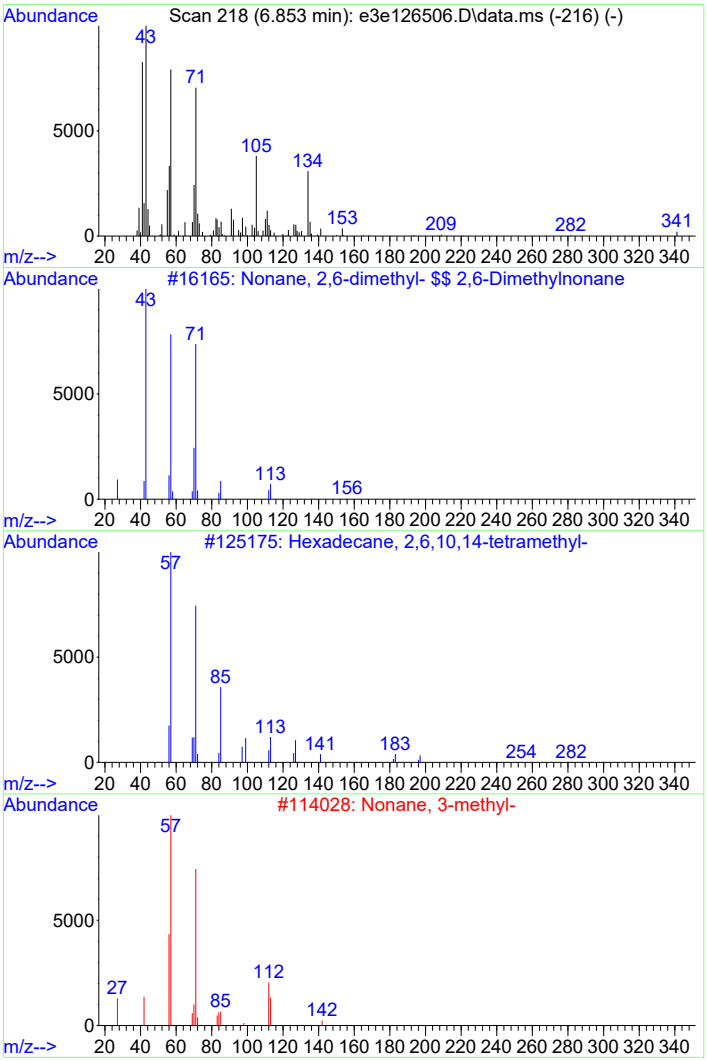
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

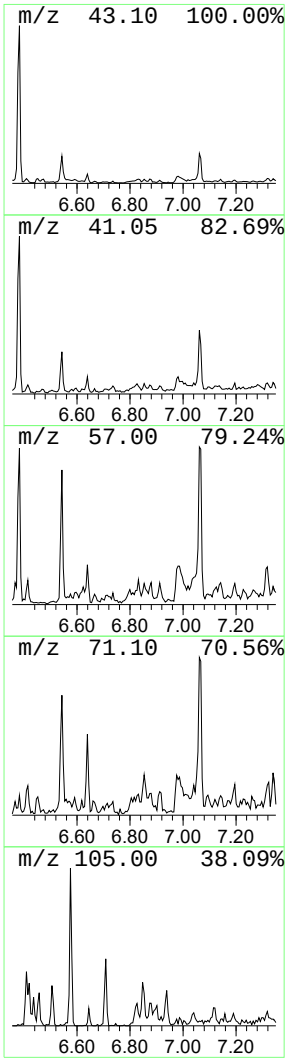
****

Peak Number 3 Alkane Concentration Rank 45

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.853	0.00	95691	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonane, 2,6-dimethyl- $$ 2,6-Dim...	156	C11H24	017302-28-2	47
2	Hexadecane, 2,6,10,14-tetramethyl-	282	C20H42	000638-36-8	43
3	Nonane, 3-methyl-	142	C10H22	005911-04-6	43
4	Octane, 3-ethyl- $$ 3-Ethyloctane	142	C10H22	005881-17-4	43
5	Ethanone, 1-(3-ethylcyclobutyl)-	126	C8H14O	056335-71-8	38





Library Search Compound Report

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Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

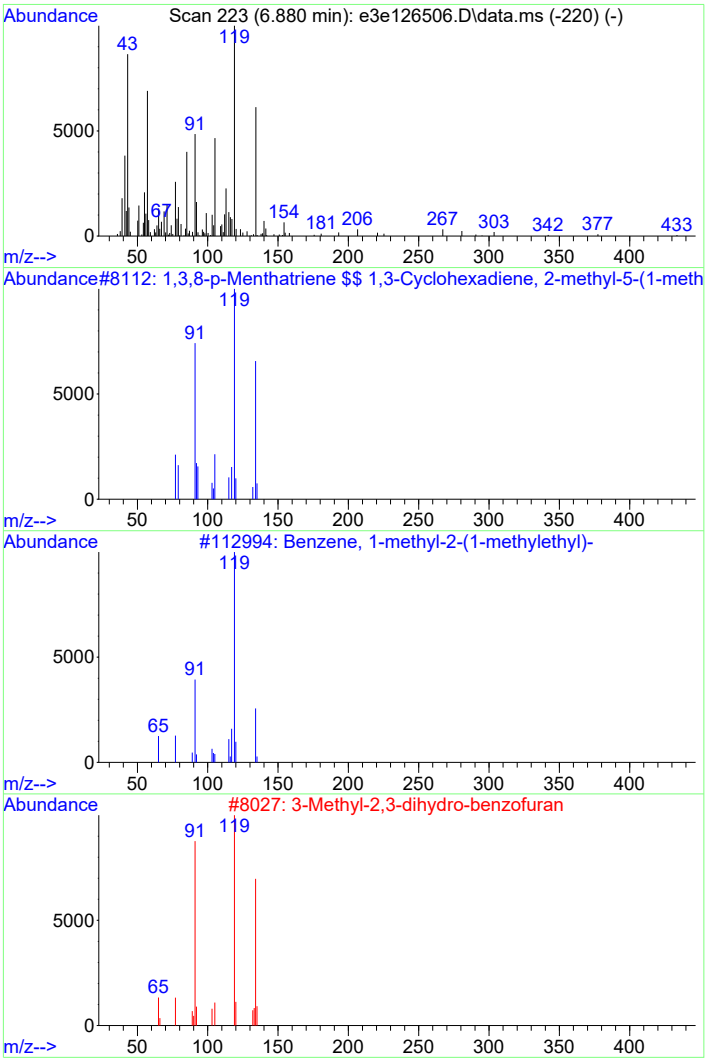
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

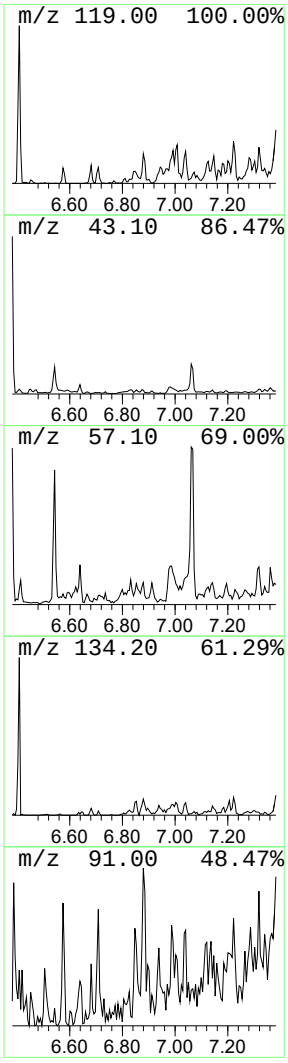
****

Peak Number 4 Benzene, 1-methyl-2-(1-meth... Concentration Rank 39

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.880	0.00	119713	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	1,3,8-p-Menthatriene $$ 1,3-Cycl...	134	C10H14	021195-59-5	58
2	Benzene, 1-methyl-2-(1-methyleth...	134	C10H14	000527-84-4	49
3	3-Methyl-2,3-dihydro-benzofuran	134	C9H10O	013524-73-7	47
4	Benzene, 2-ethyl-1,3-dimethyl- $...	134	C10H14	002870-04-4	46
5	Benzene, 1,2,4,5-tetramethyl-	134	C10H14	000095-93-2	46





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7.3.1

7

Library Search Compound Report

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Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

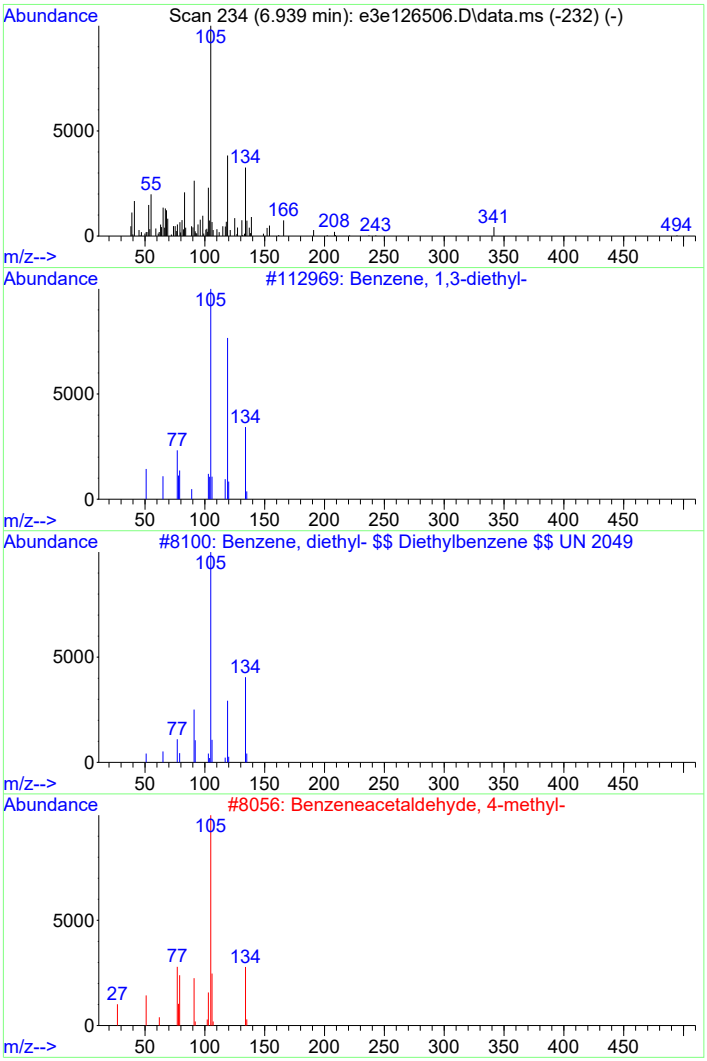
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

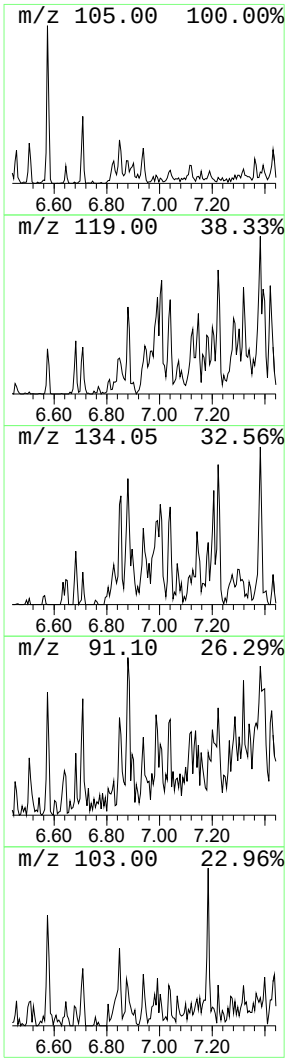
****

Peak Number 6 Benzene, 1,3-diethyl- Concentration Rank 54

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.939	0.00	61168	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 1,3-diethyl-	134	C10H14	000141-93-5	43
2	Benzene, diethyl- $$ Diethylbenz...	134	C10H14	025340-17-4	37
3	Benzeneacetaldehyde, 4-methyl-	134	C9H10O	000104-09-6	27
4	3a,6-Methano-3ah-indene, 2,3,4,5...	134	C10H14	098640-10-9	25
5	Benzene, 1-methyl-2-propyl-	134	C10H14	001074-17-5	14





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Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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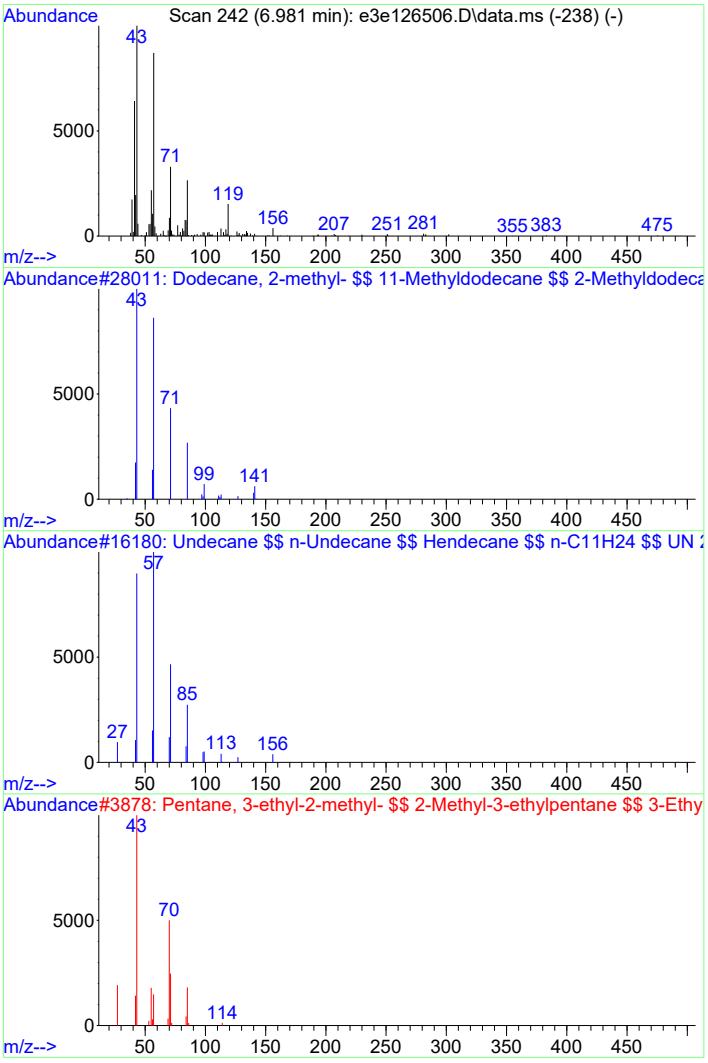
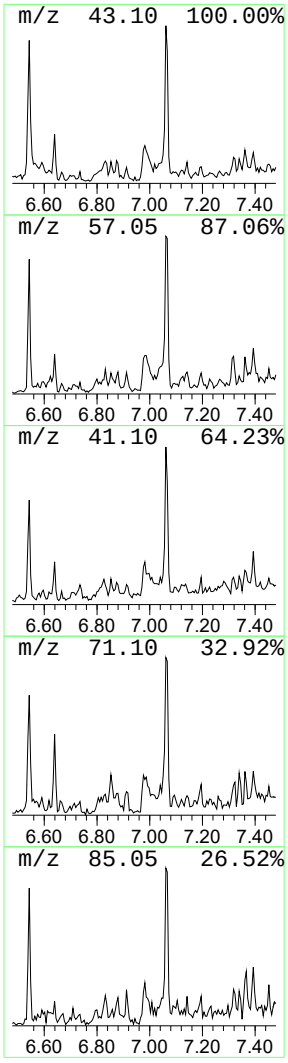
Peak Number 7 Alkane Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.981	0.00	816731	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane, 2-methyl- $$ 11-Methyl...	184	C13H28	001560-97-0	64
2	Undecane $$ n-Undecane $$ Hendec...	156	C11H24	001120-21-4	58
3	Pentane, 3-ethyl-2-methyl- $$ 2-...	114	C8H18	000609-26-7	50
4	Undecane	156	C11H24	001120-21-4	49
5	Undecane	156	C11H24	001120-21-4	49





7.3.1 7

Library Search Compound Report

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Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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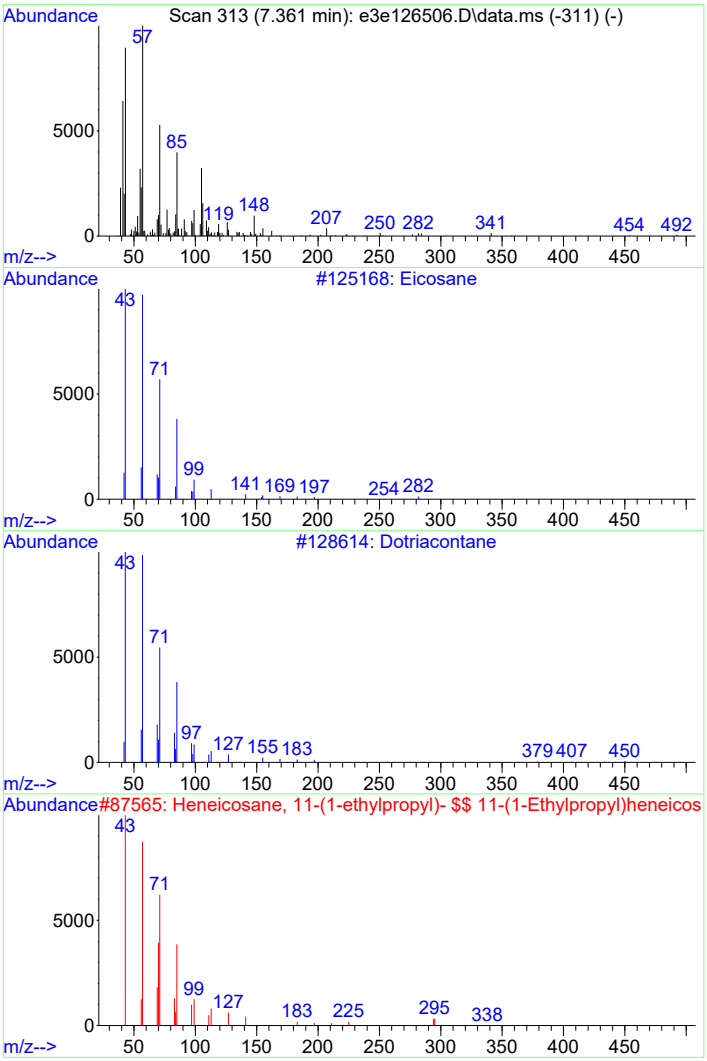
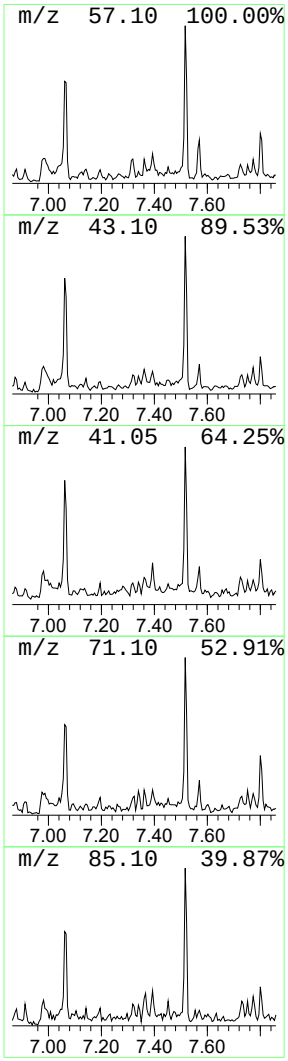
Peak Number 8 Alkane Concentration Rank 35

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.361	0.00	266471	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane	282	C20H42	000112-95-8	70
2	Dotriacontane	451	C32H66	000544-85-4	58
3	Heneicosane, 11-(1-ethylpropyl)-...	366	C26H54	055282-11-6	53
4	1-Iodo-2-methylundecane	296	C12H25I	073105-67-6	53
5	Undecane, 2,9-dimethyl-	184	C13H28	017301-26-7	53





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(b) (4)

Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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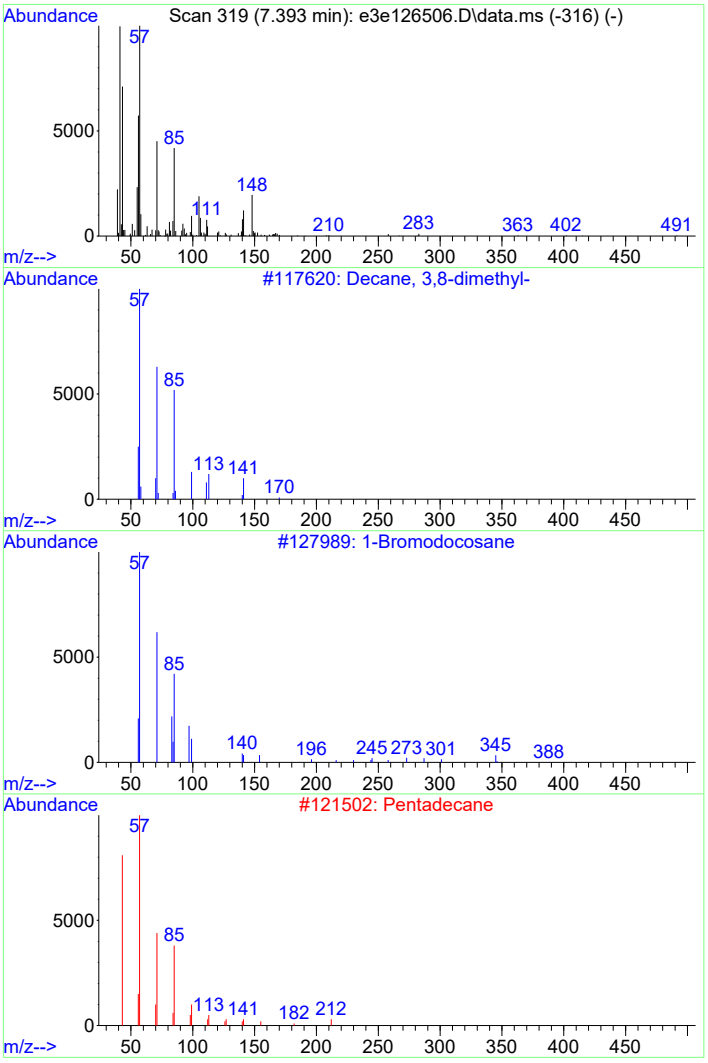
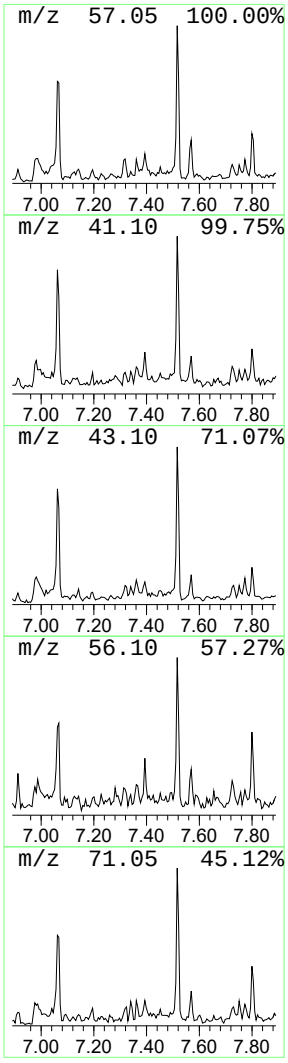
Peak Number 9 Alkane Concentration Rank 30

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.393	0.00	411146	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane, 3,8-dimethyl-	170	C12H26	017312-55-9	52
2	1-Bromodocosane	388	C22H45Br	006938-66-5	50
3	Pentadecane	212	C15H32	000629-62-9	50
4	Eicosane $$ n-Eicosane	282	C20H42	000112-95-8	50
5	Dodecane, 2-methyl-6-propyl-	226	C16H34	055045-08-4	50





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Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

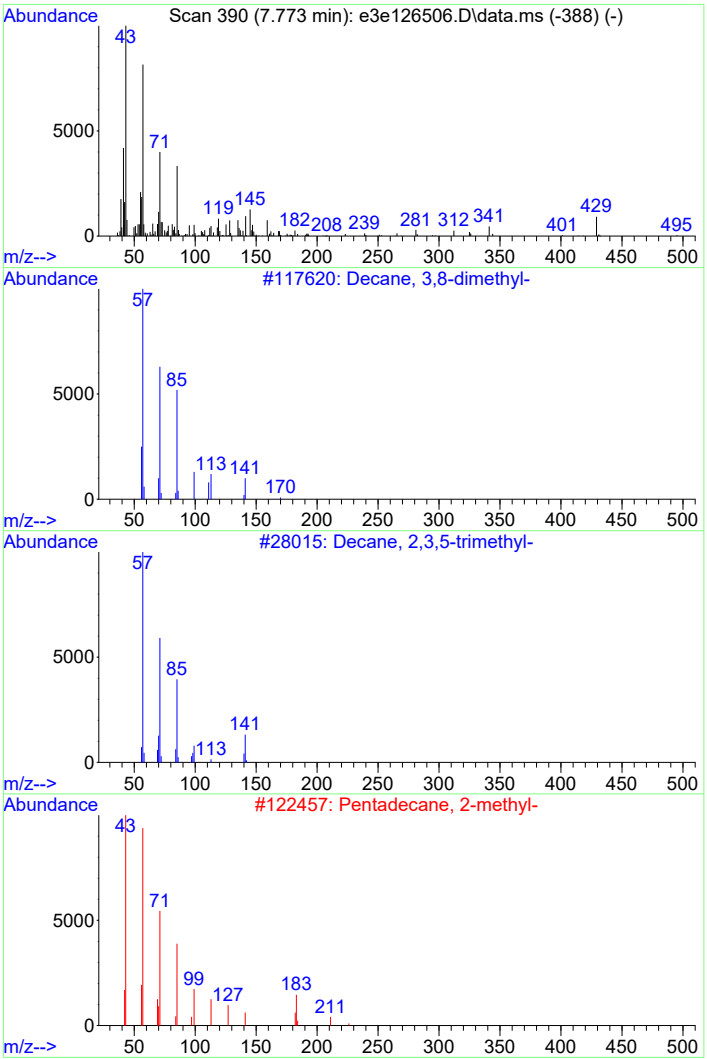
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

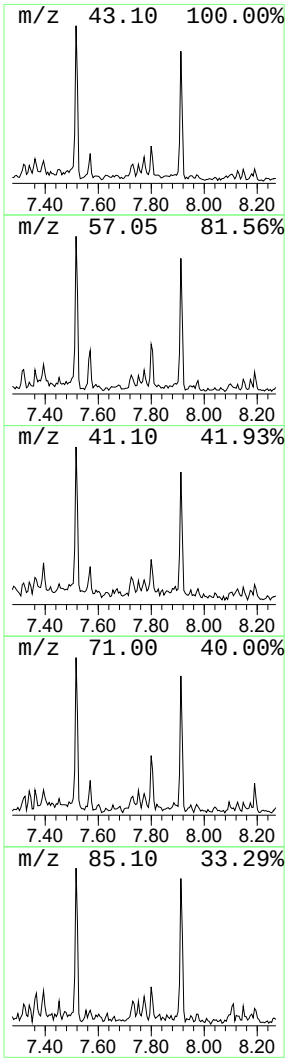
****

Peak Number 12 Alkane Concentration Rank 32

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.773	0.00	344806	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Decane, 3,8-dimethyl-	170	C12H26	017312-55-9	58
2	Decane, 2,3,5-trimethyl-	184	C13H28	062238-11-3	53
3	Pentadecane, 2-methyl-	226	C16H34	001560-93-6	53
4	Decane, 2,3,6-trimethyl-	184	C13H28	062238-12-4	53
5	Eicosane	282	C20H42	000112-95-8	52





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Operator : (b) (6)
Sample : op60797-bs1
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ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

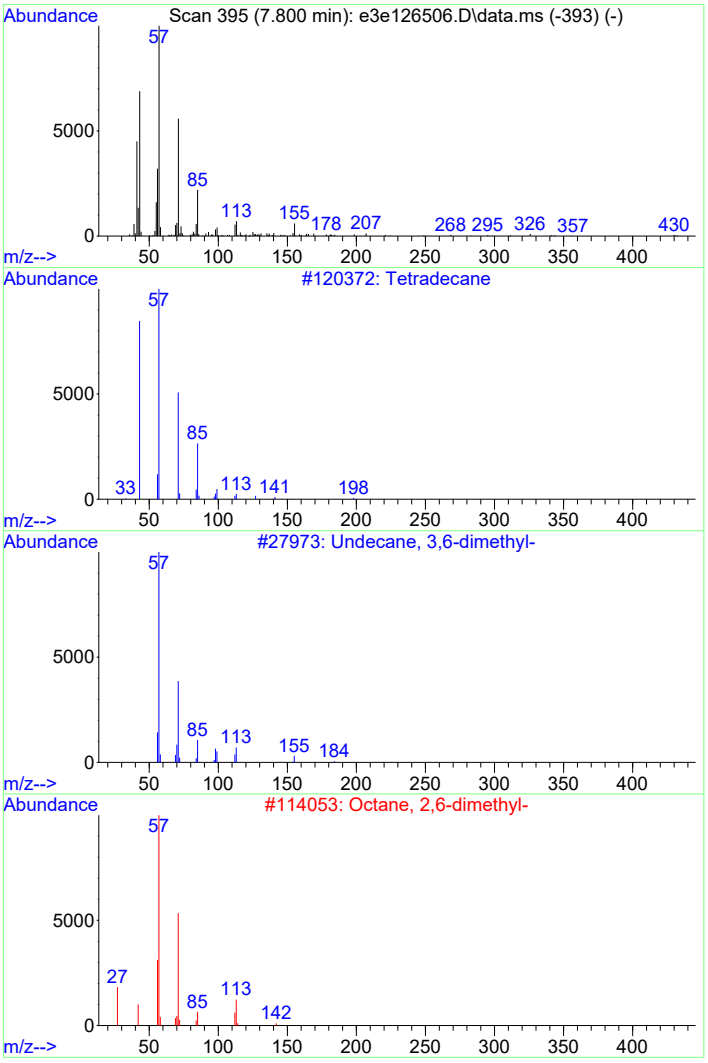
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

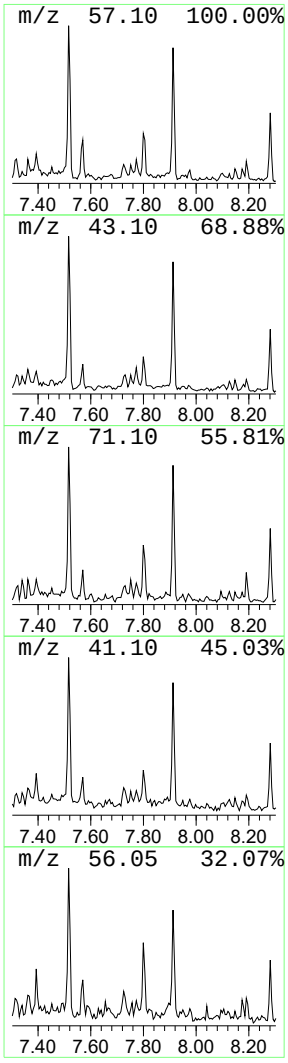
****

Peak Number 13 Alkane Concentration Rank 23

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.800	0.00	624063	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetradecane	198	C14H30	000629-59-4	64
2	Undecane, 3,6-dimethyl-	184	C13H28	017301-28-9	59
3	Octane, 2,6-dimethyl-	142	C10H22	002051-30-1	59
4	Heptadecane, 2,6-dimethyl-	268	C19H40	054105-67-8	53
5	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	50





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Operator : (b) (6)
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ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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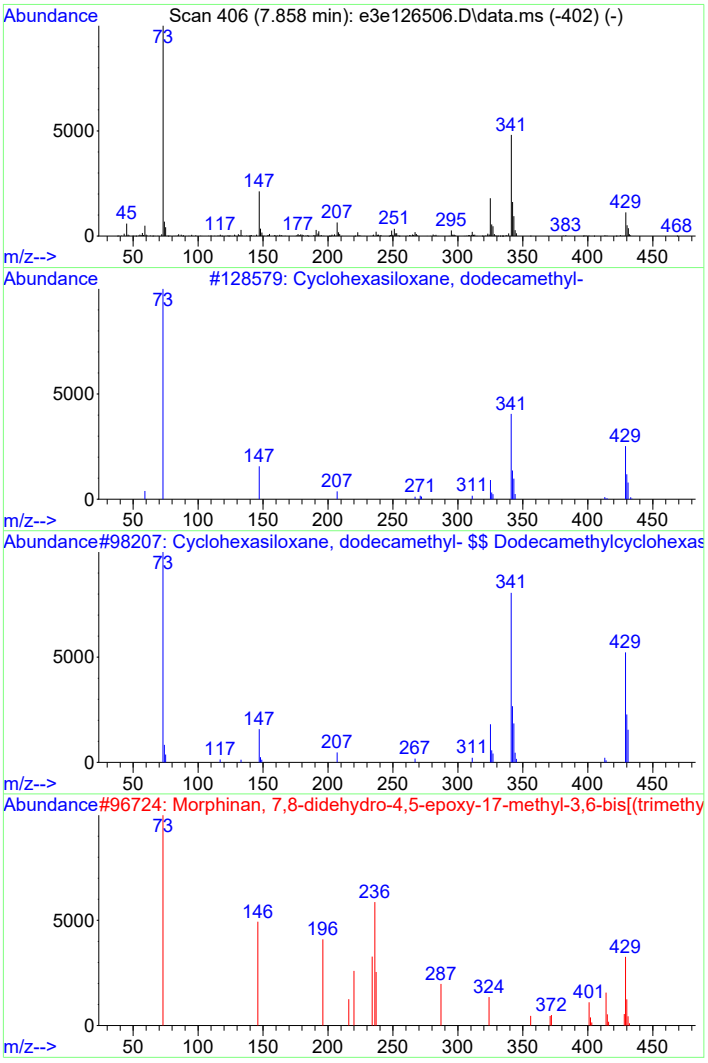
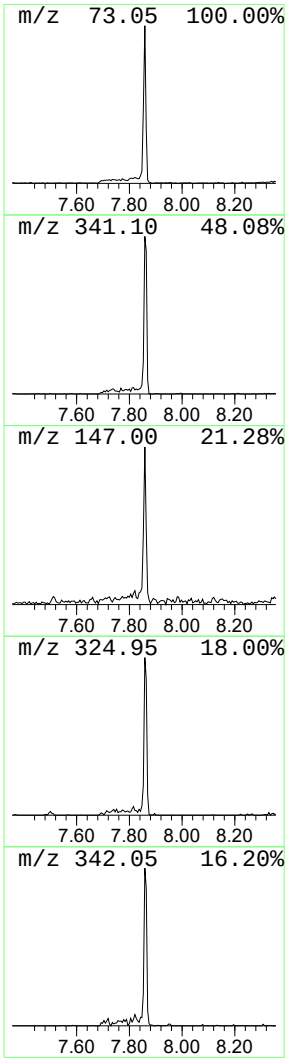
Peak Number 14 Siloxane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
7.858	0.00	1311570	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexasiloxane, dodecamethyl-	444	C12H36O6Si6	000540-97-6	91
2	Cyclohexasiloxane, dodecamethyl-...	444	C12H36O6Si6	000540-97-6	87
3	Morphinan, 7,8-didehydro-4,5-epo...	429	C23H35NO3Si2	055449-66-6	35
4	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	32
5	3-Trimethylsilyloxystearic acid,...	444	C24H52O3Si2	000000-00-0	16





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Sample : op60797-bs1
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ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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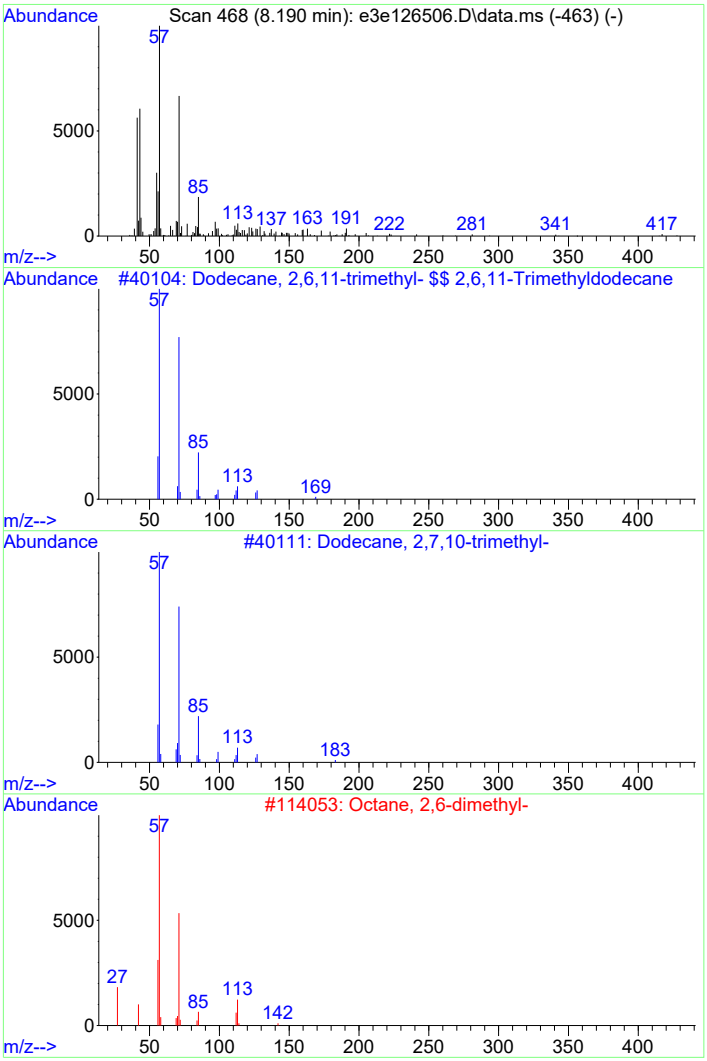
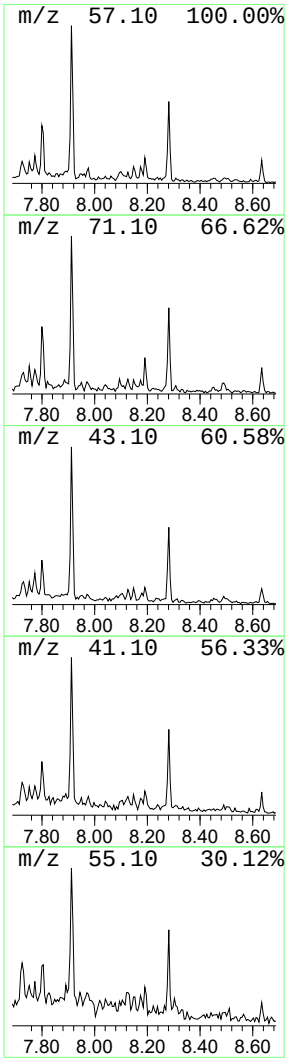
Peak Number 16 Alkane Concentration Rank 34

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.190	0.00	337539	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dodecane, 2,6,11-trimethyl- $$ 2...	212	C15H32	031295-56-4	72
2	Dodecane, 2,7,10-trimethyl-	212	C15H32	074645-98-0	58
3	Octane, 2,6-dimethyl-	142	C10H22	002051-30-1	53
4	Bacchotricuneatin c	342	C20H22O5	066563-30-2	52
5	Undecane, 3,5-dimethyl-	184	C13H28	017312-81-1	52





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ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

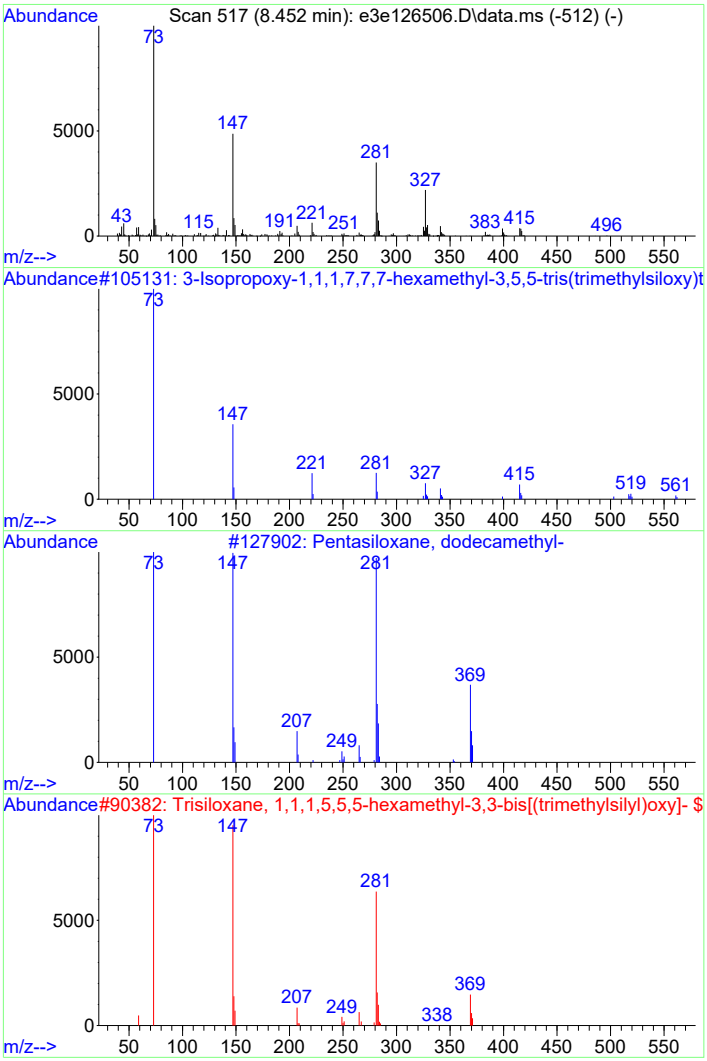
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

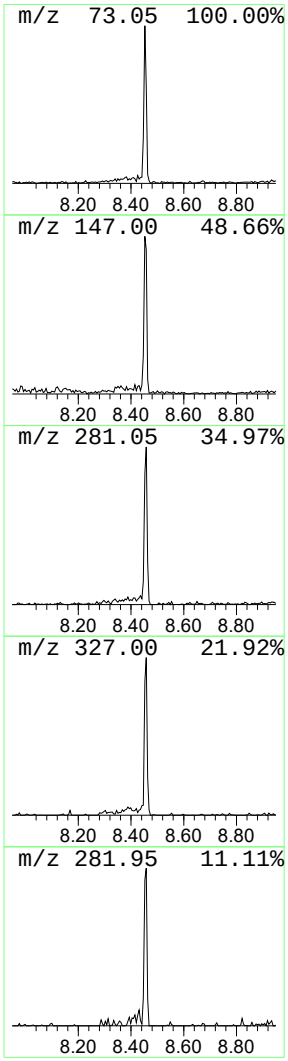
****

Peak Number 17 Siloxane Concentration Rank 19

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.452	0.00	689203	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	53
2	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	32
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	32
4	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	20
5	Cyclohexanecarboxylic acid, 4-[[...	385	C20H43NO2Si2	000000-00-0	14





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Sample : op60797-bs1
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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

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TIC Integration Parameters: RTEINT.P

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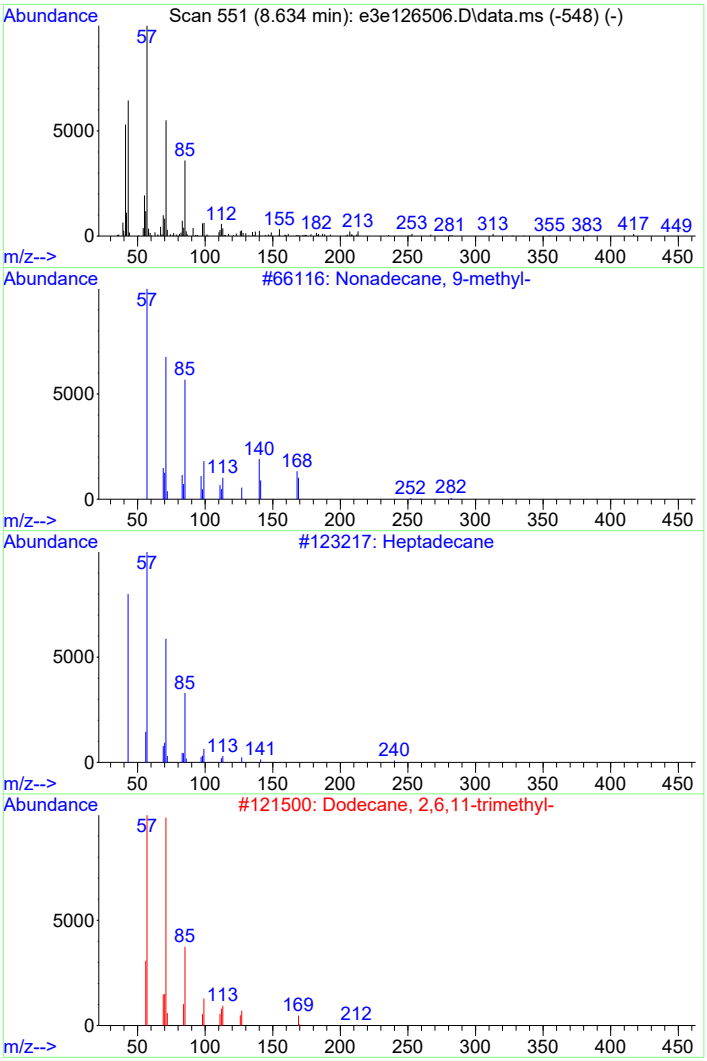
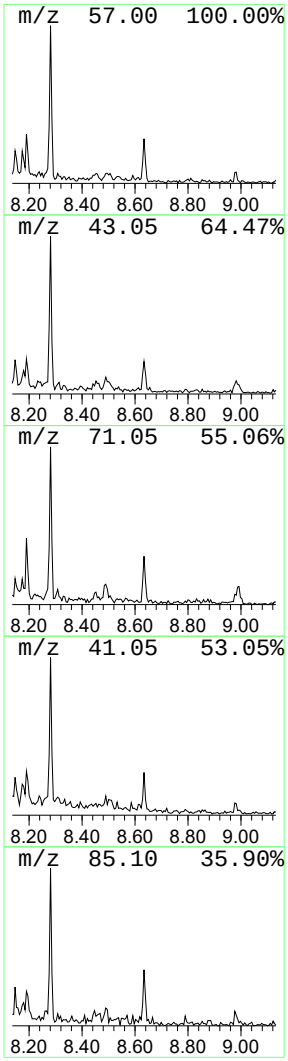
Peak Number 18 Alkane Concentration Rank 37

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.634	0.00	192187	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Nonadecane, 9-methyl-	282	C20H42	013287-24-6	93
2	Heptadecane	240	C17H36	000629-78-7	86
3	Dodecane, 2,6,11-trimethyl-	212	C15H32	031295-56-4	83
4	Hexadecane, 2,6,10,14-tetramethy...	282	C20H42	000638-36-8	81
5	Hexadecane	226	C16H34	000544-76-3	80





Library Search Compound Report

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Acq On : 9 Jan 2025 2:03 pm
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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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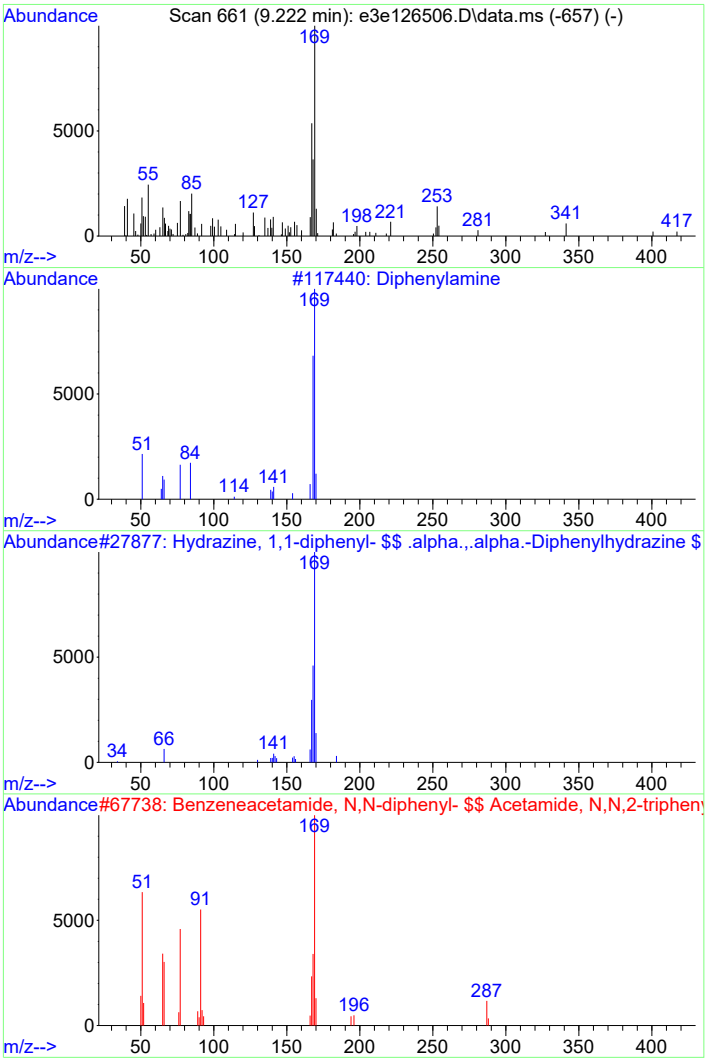
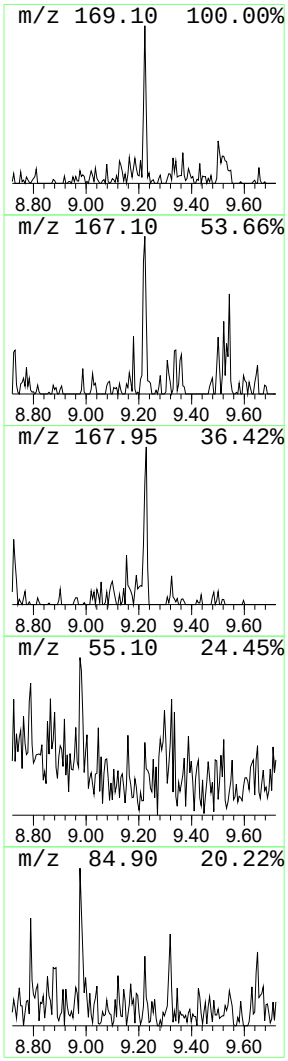
Peak Number 22 Diphenylamine Concentration Rank 62

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.222	0.00	48873	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Diphenylamine	169	C12H11N	000122-39-4	64
2	Hydrazine, 1,1-diphenyl- $$ .alp...	184	C12H12N2	000530-50-7	47
3	Benzeneacetamide, N,N-diphenyl- ...	287	C20H17NO	033675-70-6	47
4	Diphenylamine	169	C12H11N	000122-39-4	46
5	Diphenylamine $$ Benzenamine, N-...	169	C12H11N	000122-39-4	46





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ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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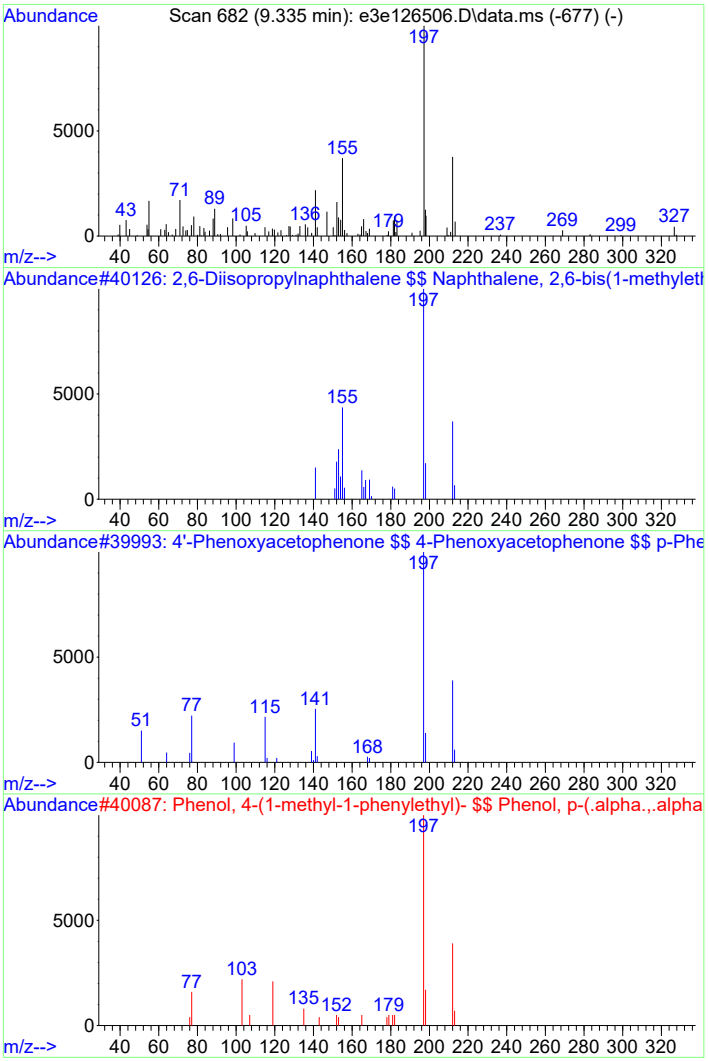
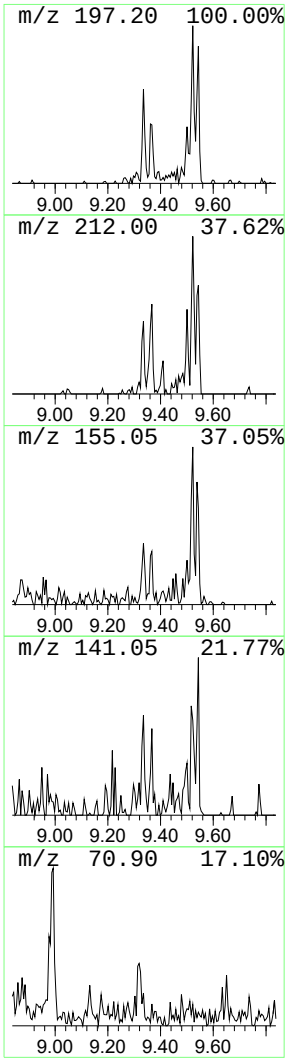
Peak Number 24 Diisopropylnaphthalene Concentration Rank 50

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.335	0.00	81681	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	64
2	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	49
3	Phenol, 4-(1-methyl-1-phenylethy...	212	C15H16O	000599-64-4	47
4	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	46
5	Phenol, 4-(1-methyl-1-phenylethyl)-	212	C15H16O	000599-64-4	46





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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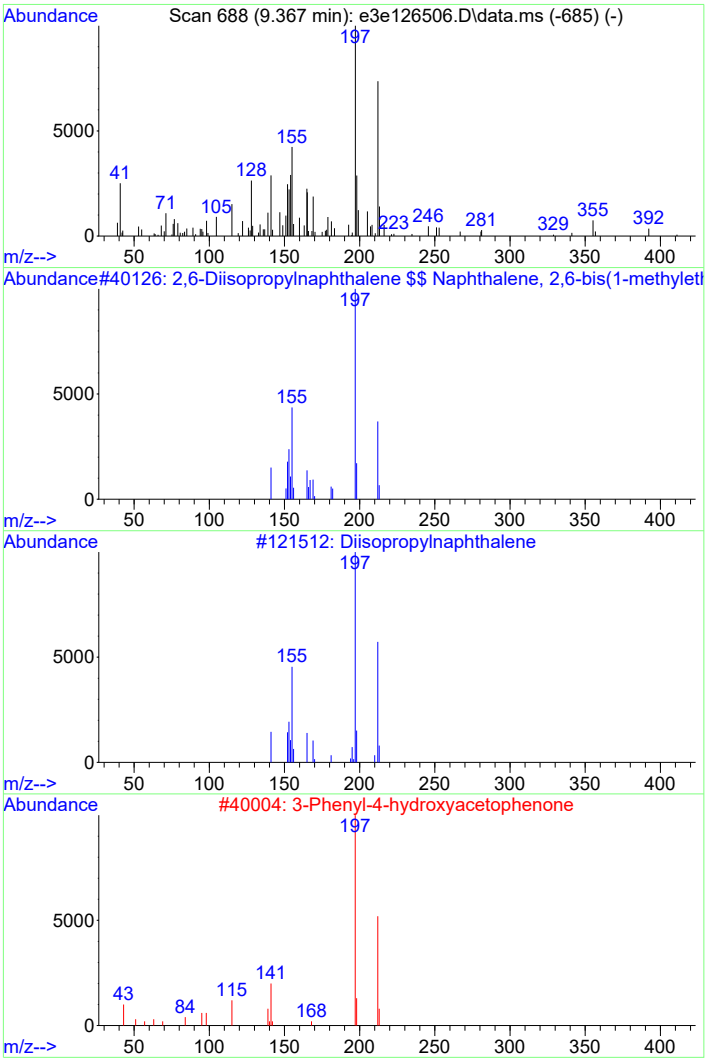
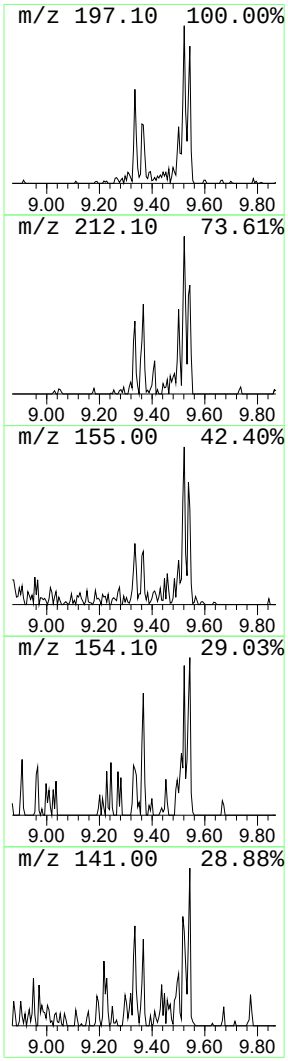
Peak Number 25 Diisopropylnaphthalene Concentration Rank 58

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.367	0.00	52478	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	81
2	Diisopropylnaphthalene	212	C16H20	038640-62-9	64
3	3-Phenyl-4-hydroxyacetophenone	212	C14H12O2	021424-82-8	55
4	Naphthalene, 6-methoxy-2-(1-bute...	212	C15H16O	101327-54-2	53
5	Benzoic acid, 3,4,5-trimethoxy- ...	212	C10H12O5	000118-41-2	53





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Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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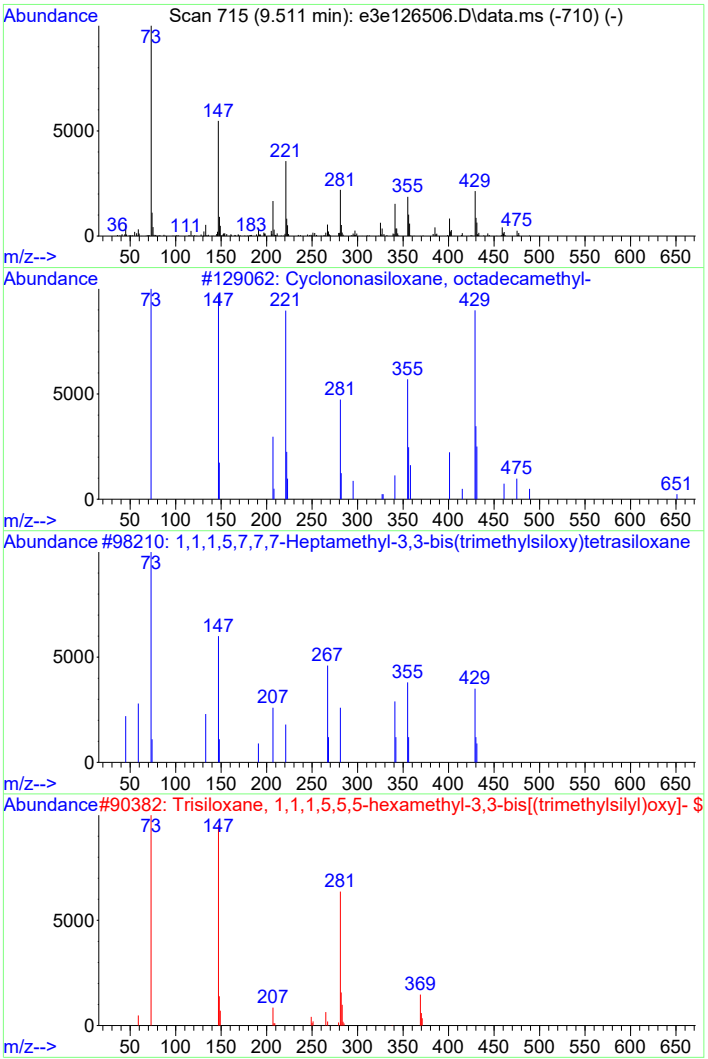
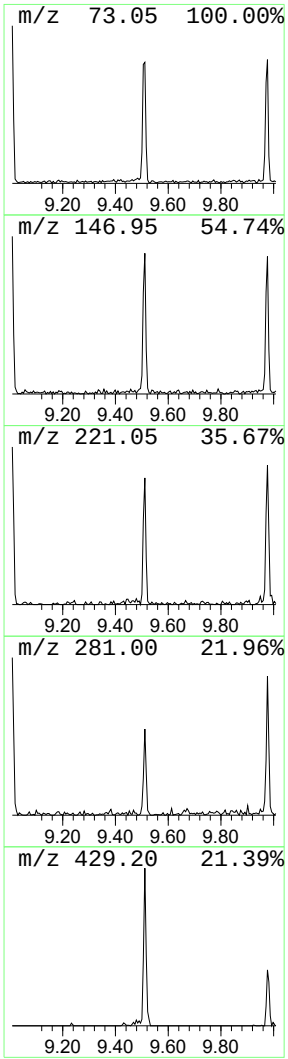
Peak Number 26 Siloxane Concentration Rank 24

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.511	0.00	502331	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	90
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	42
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	17
4	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	14
5	1-Monolinoleoylglycerol trimethy...	498	C27H54O4Si2	054284-45-6	13





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Sample : op60797-bs1
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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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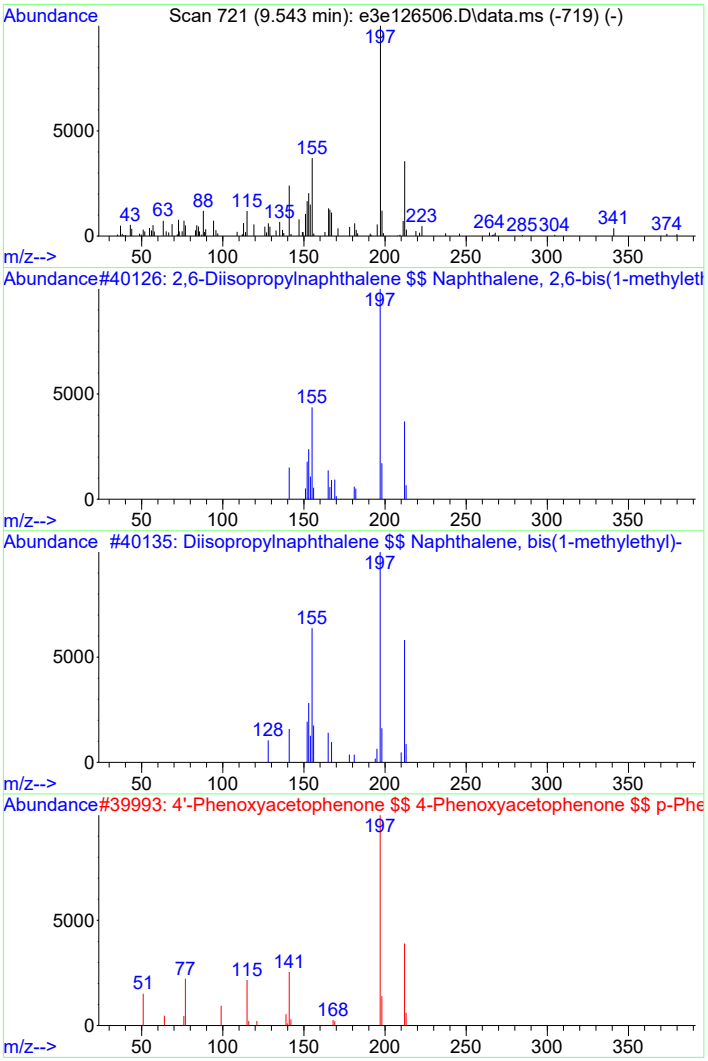
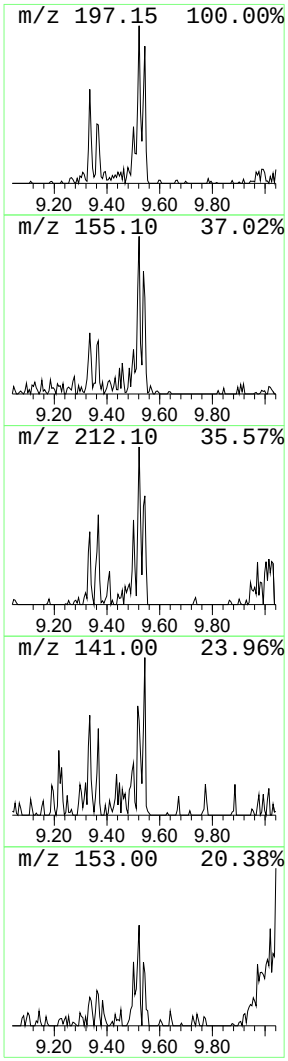
Peak Number 27 Diisopropylnaphthalene Concentration Rank 46

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.543	0.00	87908	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,6-Diisopropylnaphthalene $$ Na...	212	C16H20	024157-81-1	93
2	Diisopropylnaphthalene $$ Naphth...	212	C16H20	038640-62-9	83
3	4'-Phenoxyacetophenone $$ 4-Phen...	212	C14H12O2	005031-78-7	47
4	Naphthalene, 7-butyl-1-hexyl-	268	C20H28	055000-55-0	45
5	Phenol, 4-(1-methyl-1-phenylethy...	212	C15H16O	000599-64-4	43





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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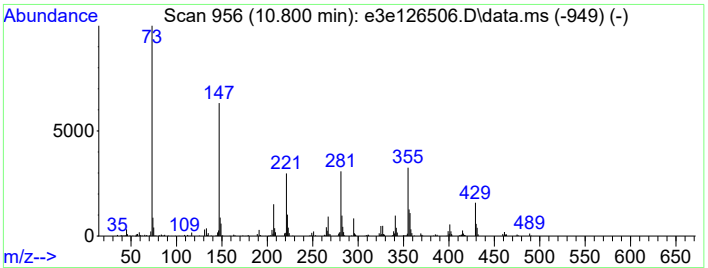
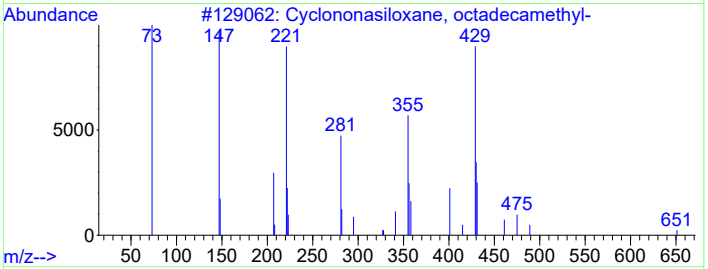
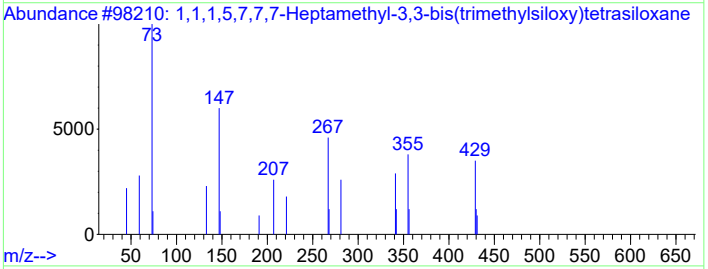
Peak Number 33 Siloxane Concentration Rank 25

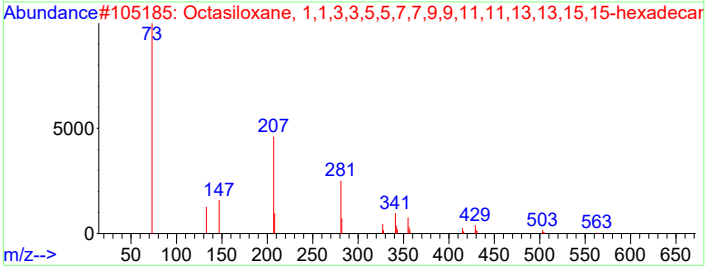
R.T.	EstConc	Area	Relative to ISTD	R.T.
10.800	0.00	484900	External Standard	0.000

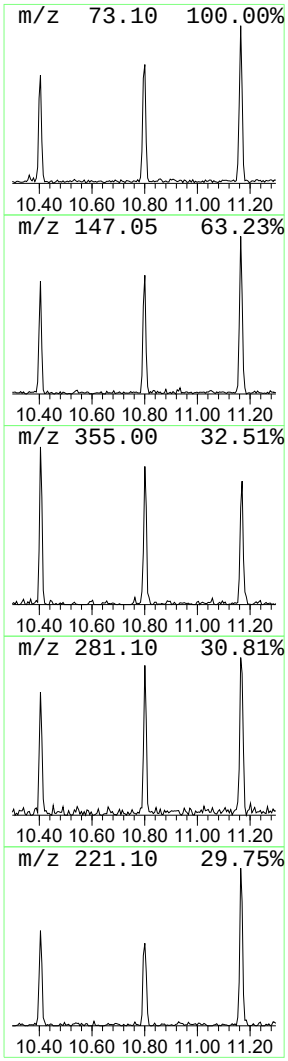
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	50
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	37
3	Octasiloxane, 1,1,3,3,5,5,7,7,9,...	578	C16H50O7Si8	019095-24-0	25
4	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	25
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	25











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Sample : op60797-bs1
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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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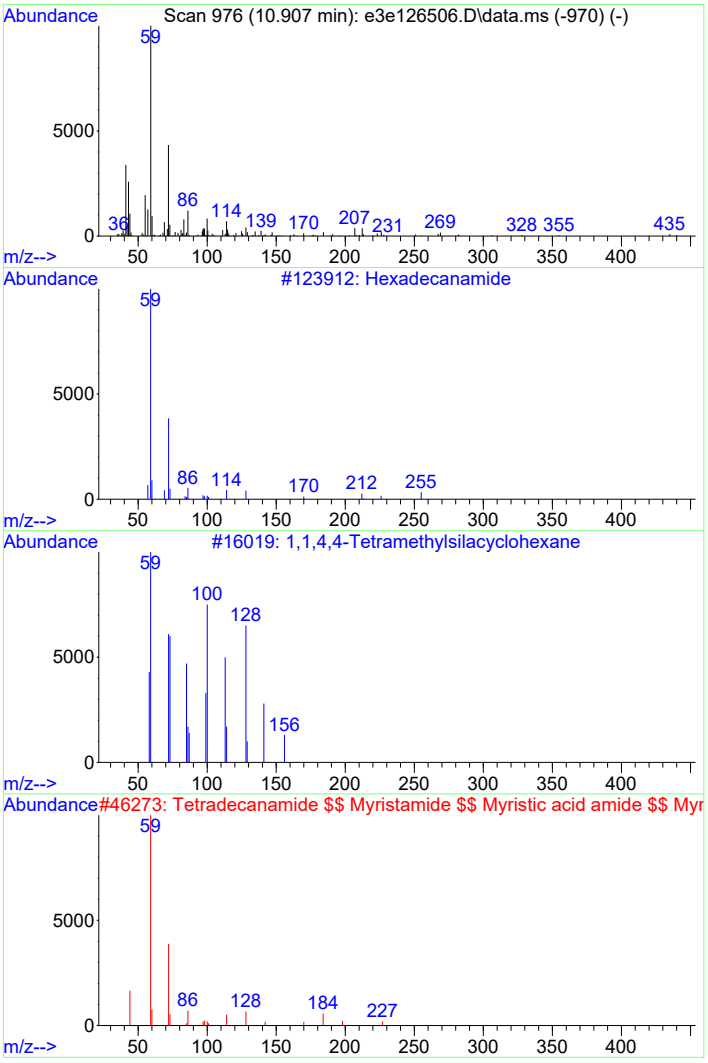
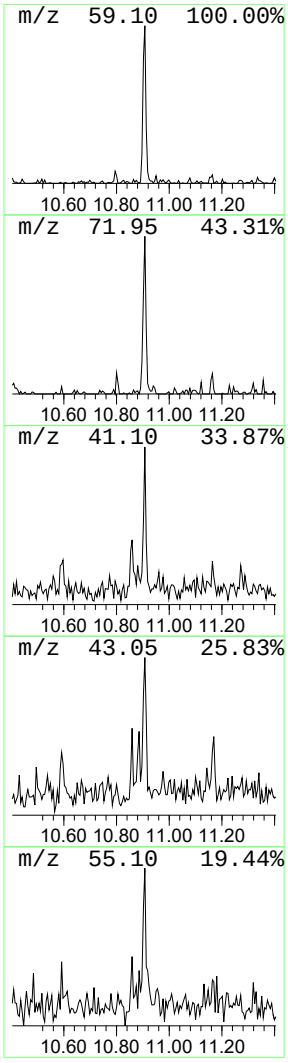
Peak Number 35 Hexadecanamide Concentration Rank 38

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.907	0.00	139406	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexadecanamide	255	C16H33NO	000629-54-9	72
2	1,1,4,4-Tetramethylsilacyclohexane	156	C9H20Si	086236-96-6	64
3	Tetradecanamide $$ Myristamide $...	227	C14H29NO	000638-58-4	56
4	Tetradecanamide	227	C14H29NO	000638-58-4	56
5	Heptanamide, 4-ethyl-5-methyl-	171	C10H21NO	054789-40-1	50





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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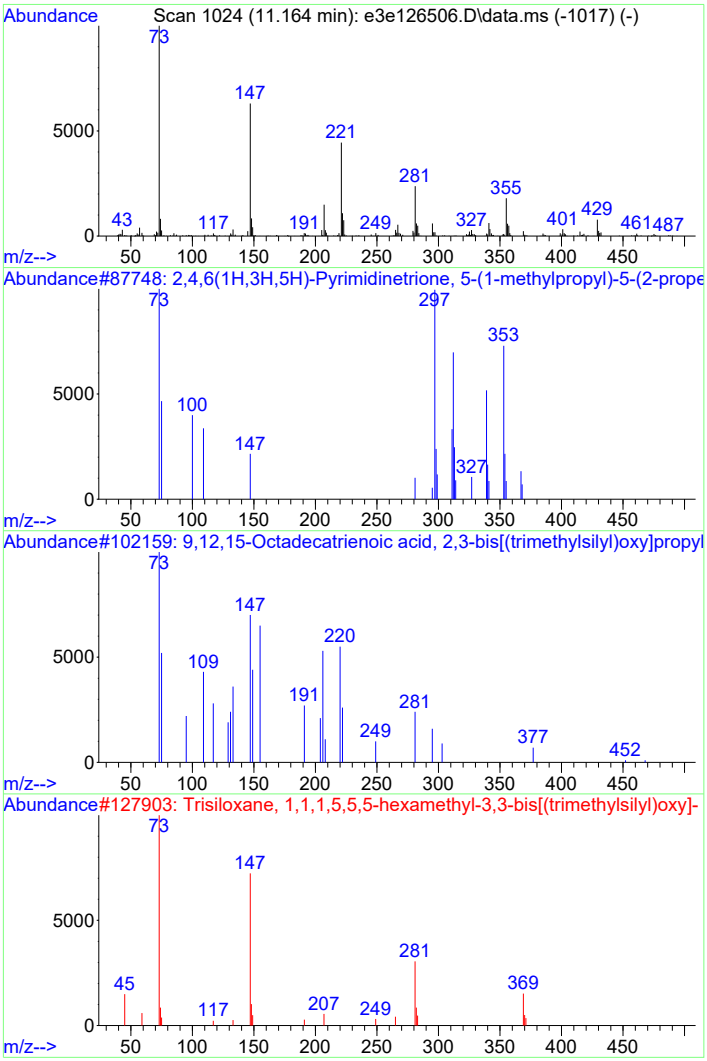
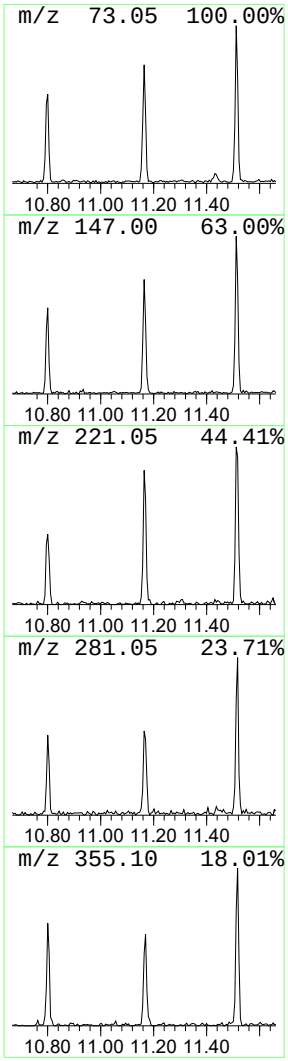
Peak Number 36 Siloxane Concentration Rank 22

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.164	0.00	647017	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	2,4,6(1H,3H,5H)-Pyrimidinetrione...	368	C17H32N2O3Si2	052937-69-6	91
2	9,12,15-Octadecatrienoic acid, 2...	496	C27H52O4Si2	055521-22-7	53
3	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	38
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	23
5	N-Benzhydrylidene-1-(2,4,6-trime...	343	C24H25NO	089839-57-6	18





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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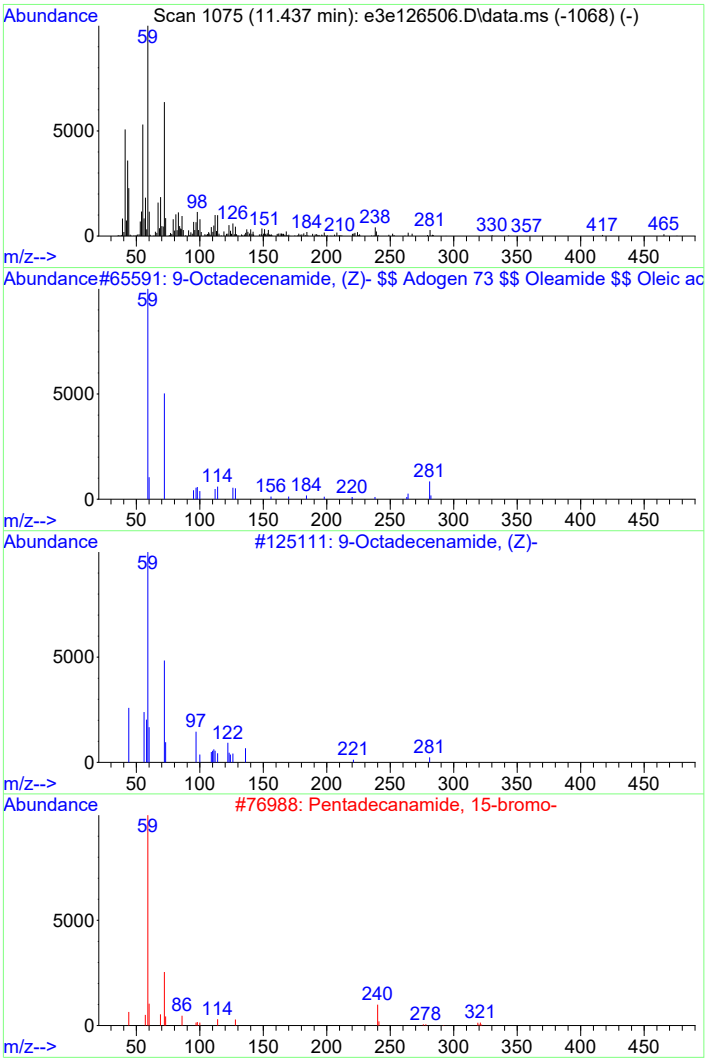
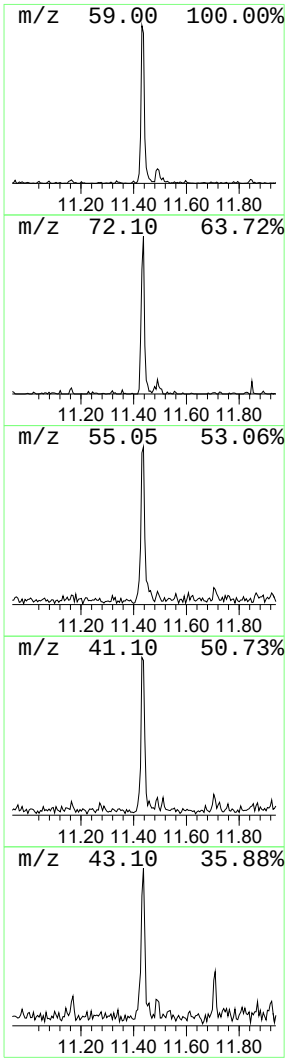
Peak Number 38 9-Octadecenamide, Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.437	0.00	782801	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	9-Octadecenamide, (Z)- $$ Adogen...	281	C18H35NO	000301-02-0	72
2	9-Octadecenamide, (Z)-	281	C18H35NO	000301-02-0	62
3	Pentadecanamide, 15-bromo-	319	C15H30BrNO	000000-00-0	59
4	Tetradecanamide	227	C14H29NO	000638-58-4	53
5	Butanamide, 3-methyl-	101	C5H11NO	000541-46-8	43





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ALS Vial : 4 Sample Multiplier: 1

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Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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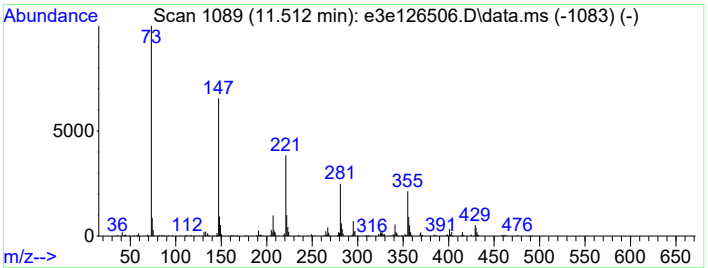
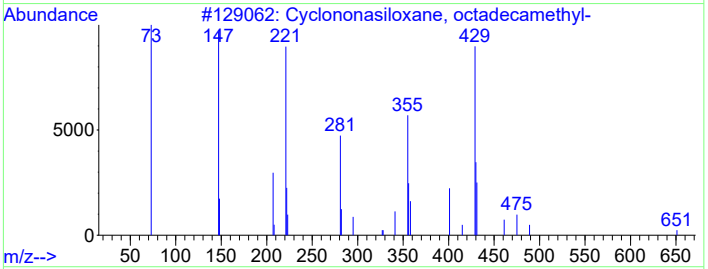
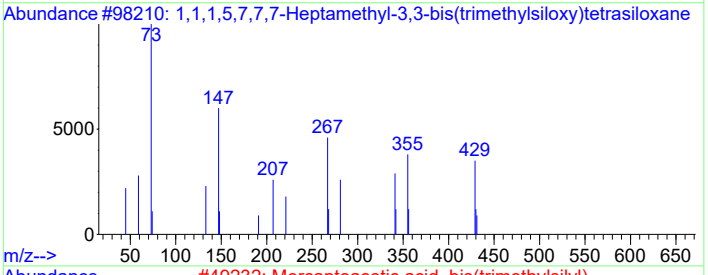
Peak Number 39 Siloxane Concentration Rank 13

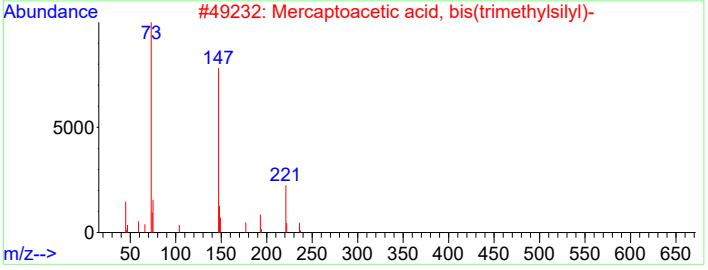
R.T.	EstConc	Area	Relative to ISTD	R.T.
11.512	0.00	841810	External Standard	0.000

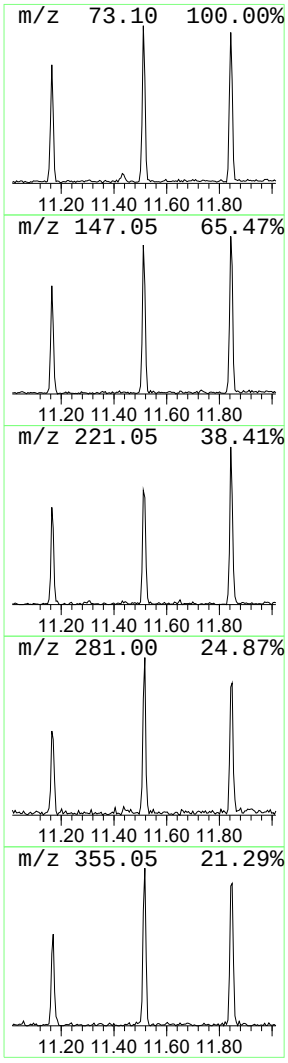
Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	45
2	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	42
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	28
4	Benzoic acid, 2,6-bis[(trimethyl...	370	C16H30O4Si3	003782-85-2	18
5	Dithioerythritol, tetrakis(trime...	442	C16H42O2S2Si4	000000-00-0	17











Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

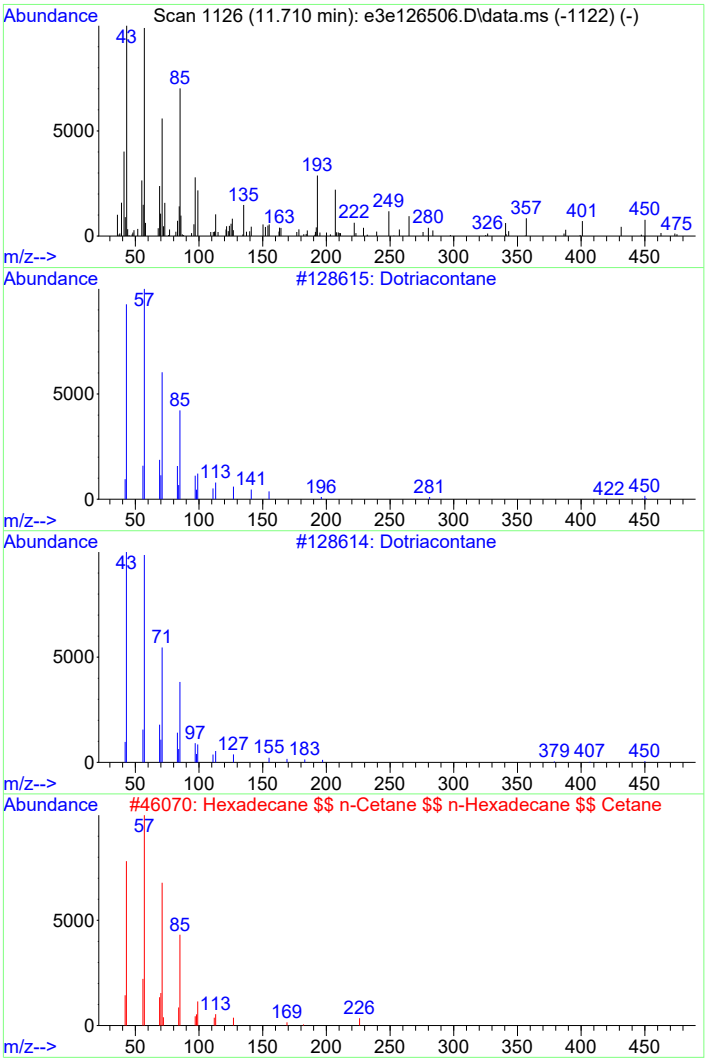
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

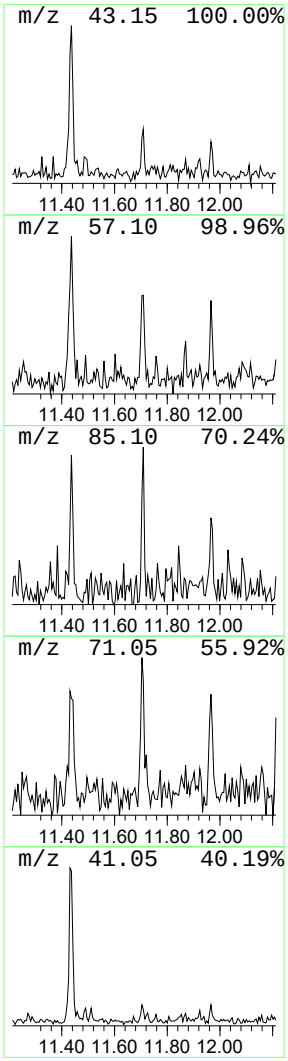
****

Peak Number 41 Alkane Concentration Rank 51

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.710	0.00	79267	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Dotriacontane	451	C32H66	000544-85-4	42
2	Dotriacontane	451	C32H66	000544-85-4	38
3	Hexadecane $$ n-Cetane $$ n-Hexa...	226	C16H34	000544-76-3	27
4	Eicosane	282	C20H42	000112-95-8	27
5	Ether, heptyl hexyl	200	C13H28O	007289-40-9	27





Library Search Compound Report

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Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

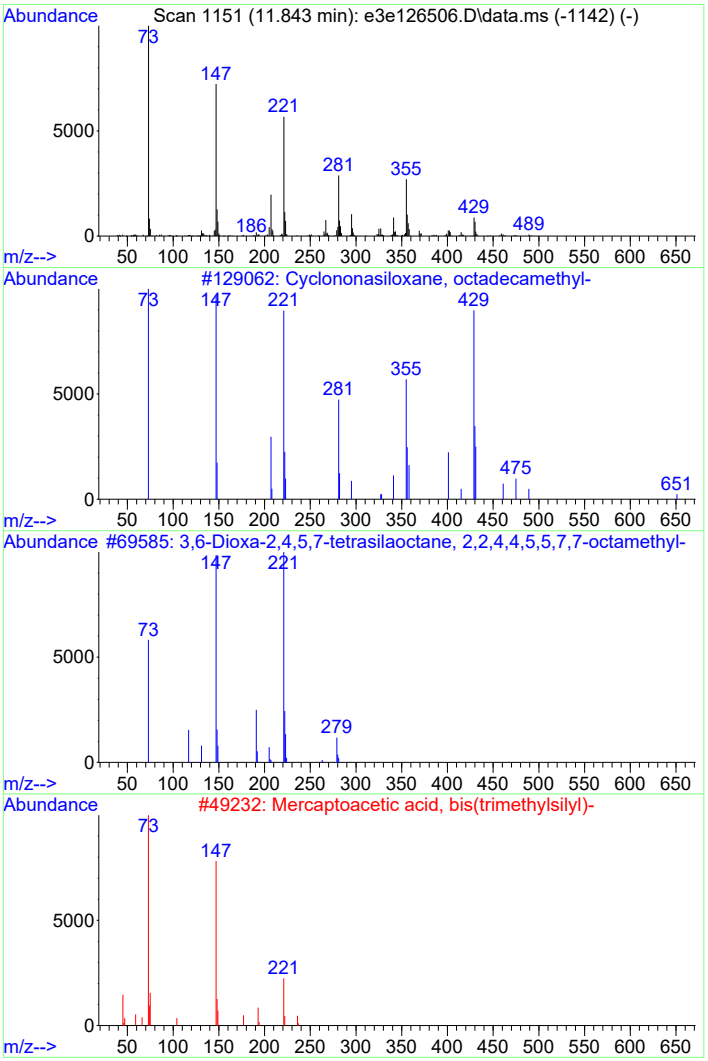
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

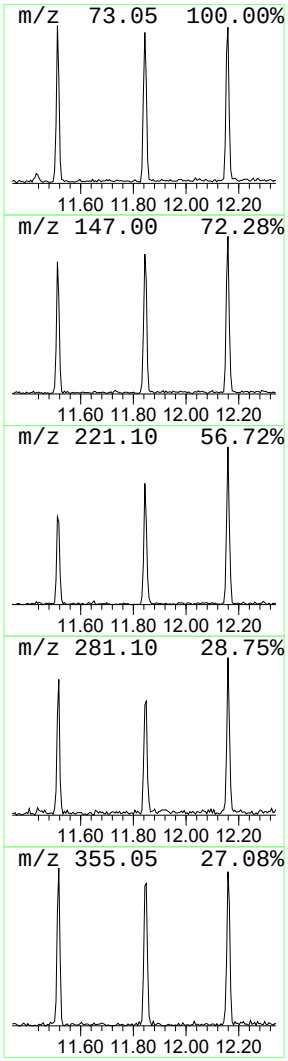
****

Peak Number 43 Siloxane Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.843	0.00	1011440	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	47
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	32
3	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	32
4	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	28
5	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	27





AECOM_e3g_TPHEXT.M Fri Jan 10 11:15:21 2025 30

Library Search Compound Report

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Acq On    :  9 Jan 2025    2:03 pm
Operator  : (b) (6)
Sample    : op60797-bs1
Misc      : op60797,e3e5888,1,,,1,1
ALS Vial  : 4   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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Peak Number 45  Alkane                          Concentration Rank 60
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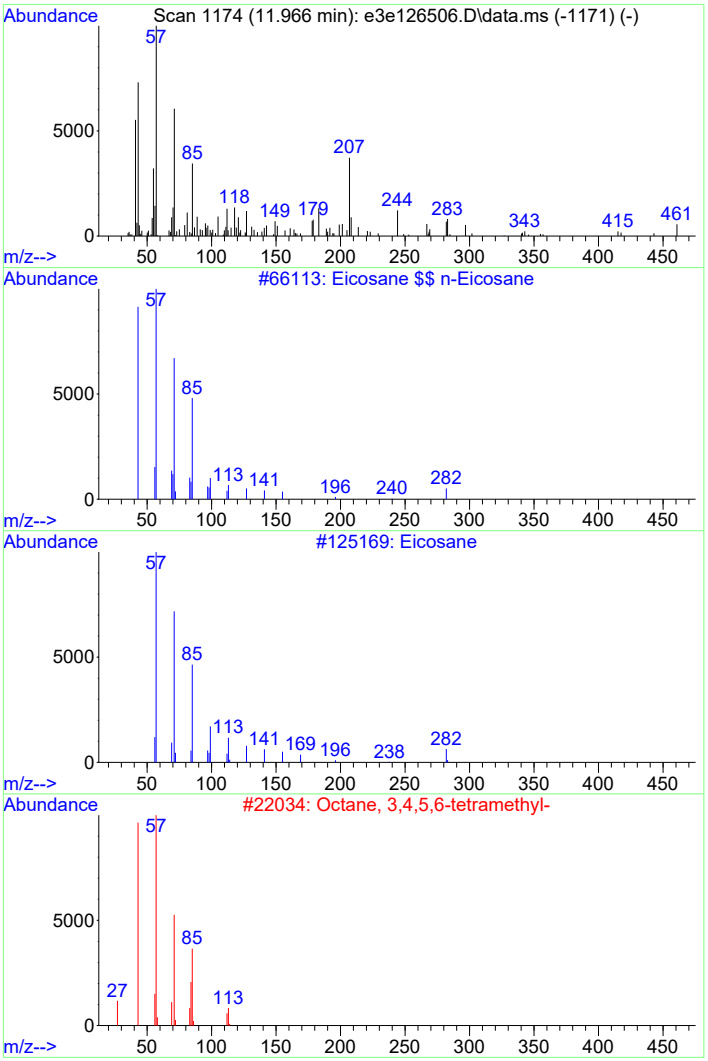
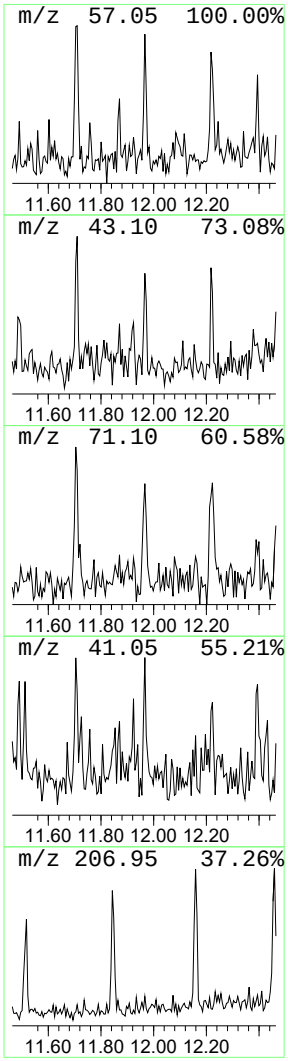
R.T.	EstConc	Area	Relative to ISTD	R.T.
11.966	0.00	49341	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Eicosane $$ n-Eicosane	282	C20H42	000112-95-8	49
2	Eicosane	282	C20H42	000112-95-8	43
3	Octane, 3,4,5,6-tetramethyl-	170	C12H26	062185-21-1	38
4	Octane, 5-ethyl-2-methyl-	156	C11H24	062016-18-6	38
5	Tridecane $$ n-Tridecane $$ Trid...	184	C13H28	000629-50-5	38





Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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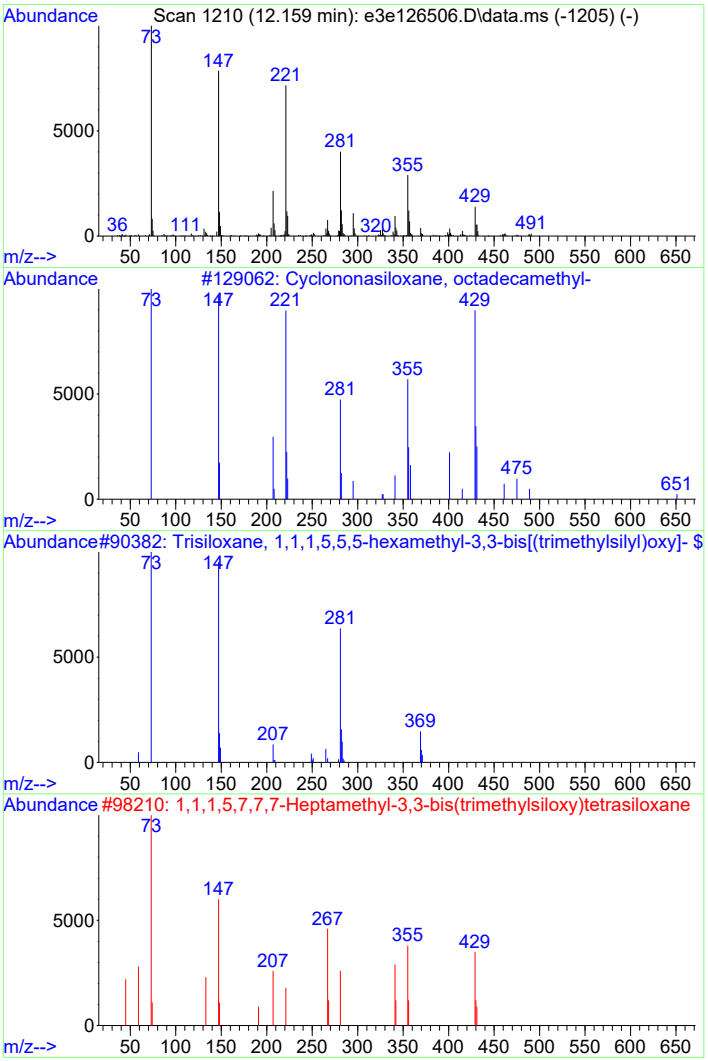
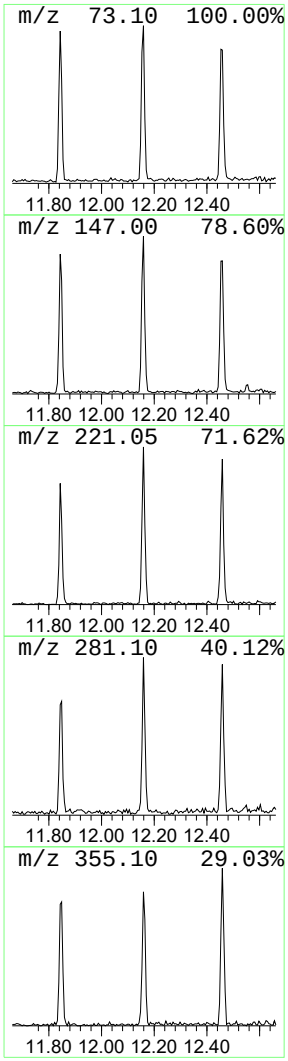
Peak Number 46 Siloxane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.159	0.00	994516	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	72
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	32
3	1,1,1,5,7,7,7-Heptamethyl-3,3-bi...	444	C13H40O5Si6	038147-00-1	25
4	Disiloxane, hexamethyl-	162	C6H18OSi2	000107-46-0	12
5	2-Propenoic acid, 2-[(trimethyls...	232	C9H20O3Si2	055191-13-4	12





Library Search Compound Report

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Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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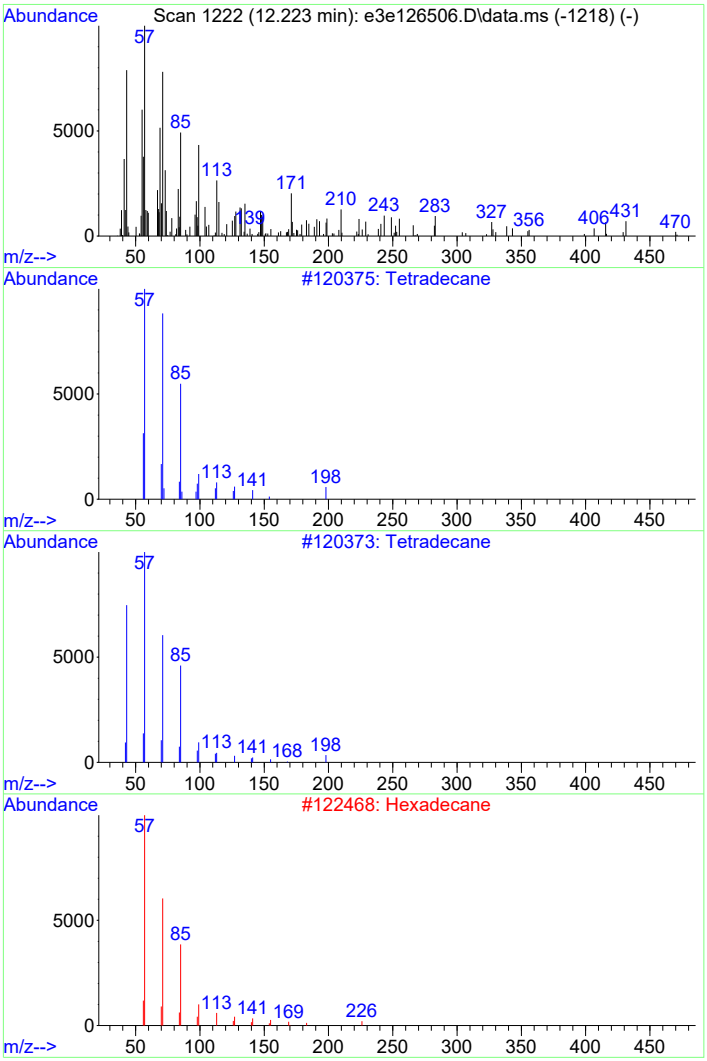
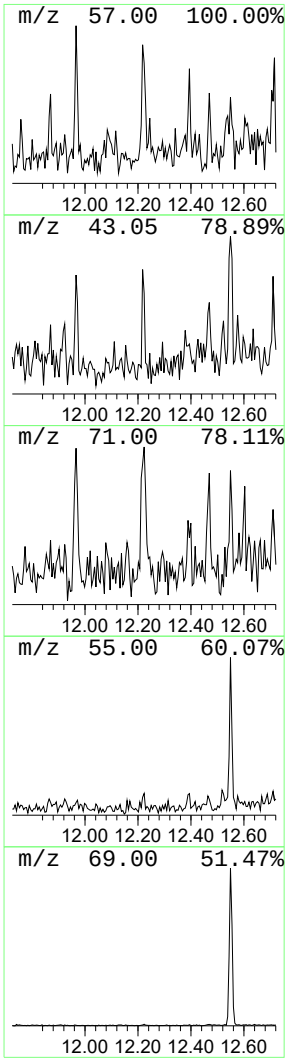
Peak Number 47 Alkane Concentration Rank 55

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.223	0.00	59968	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetradecane	198	C14H30	000629-59-4	55
2	Tetradecane	198	C14H30	000629-59-4	49
3	Hexadecane	226	C16H34	000544-76-3	46
4	Hexadecane	226	C16H34	000544-76-3	46
5	Tetradecane	198	C14H30	000629-59-4	46





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Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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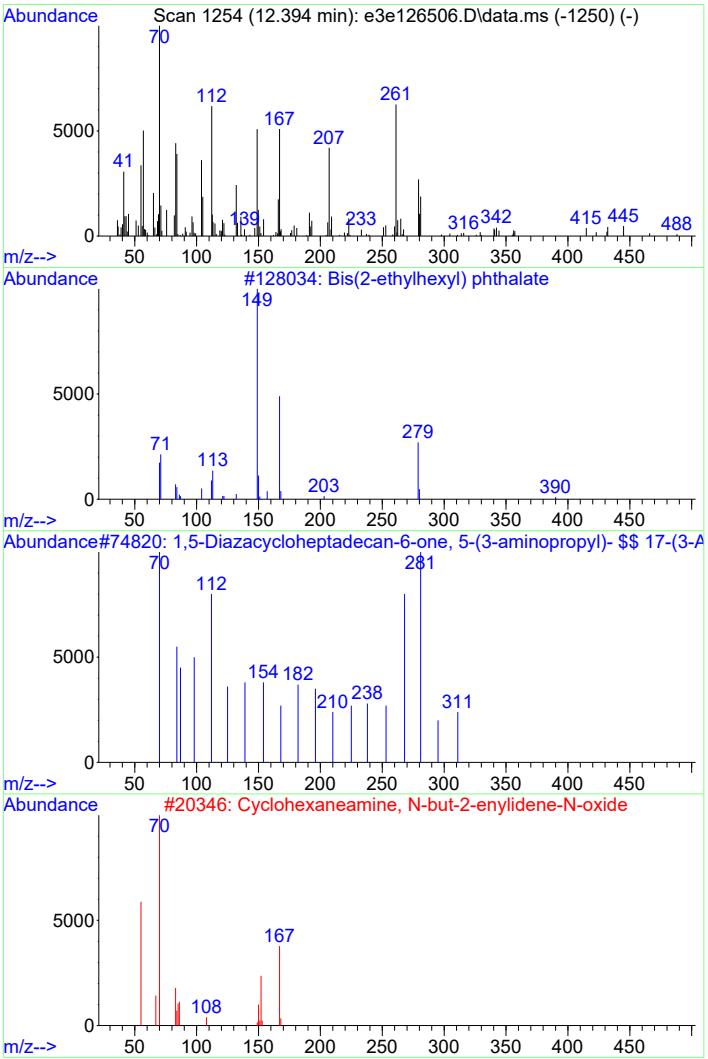
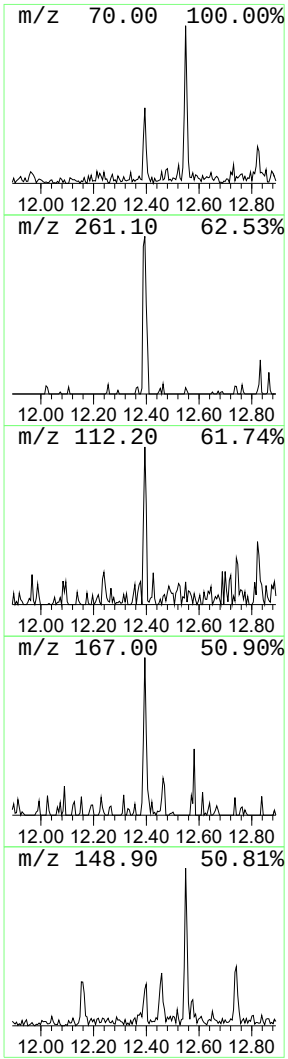
Peak Number 48 Phthalate Concentration Rank 47

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.394	0.00	85902	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Bis(2-ethylhexyl) phthalate	390	C24H38O4	000117-81-7	32
2	1,5-Diazacycloheptadecan-6-one, ...	311	C18H37N3O	064414-57-9	25
3	Cyclohexaneamine, N-but-2-enylid...	167	C10H17NO	068048-01-1	22
4	dl-2-Ethylhexyl chloroformate $$...	192	C9H17ClO2	024468-13-1	12
5	2-Oxabicyclo[4.3.0]nonan-3-one, ...	186	C9H14O4	000000-00-0	11





Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

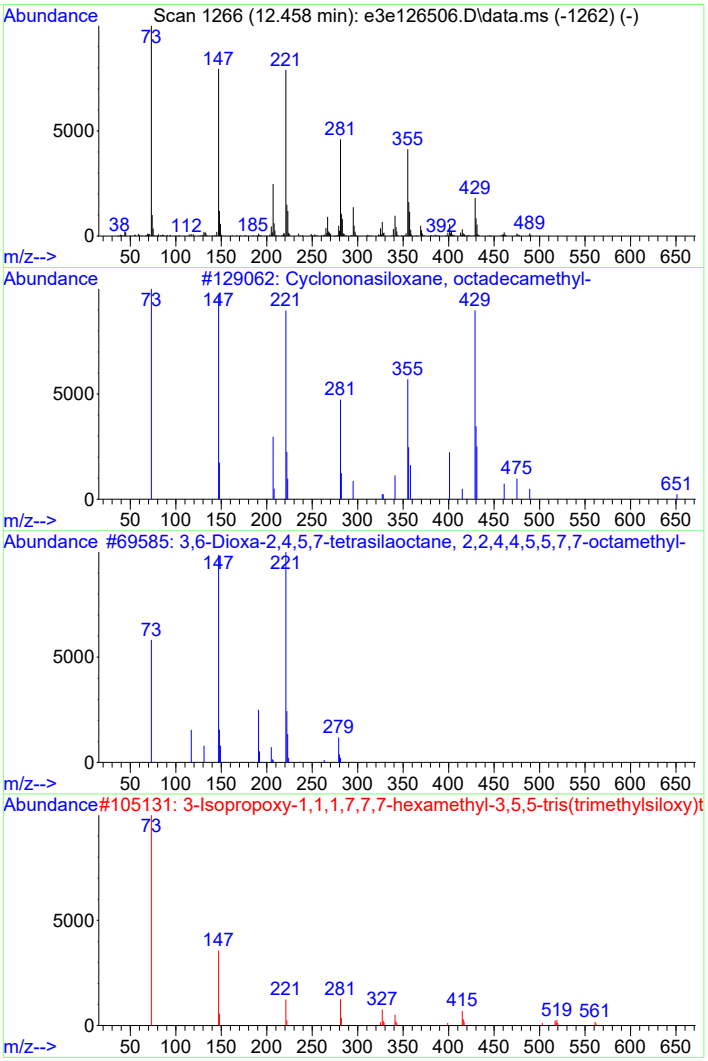
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

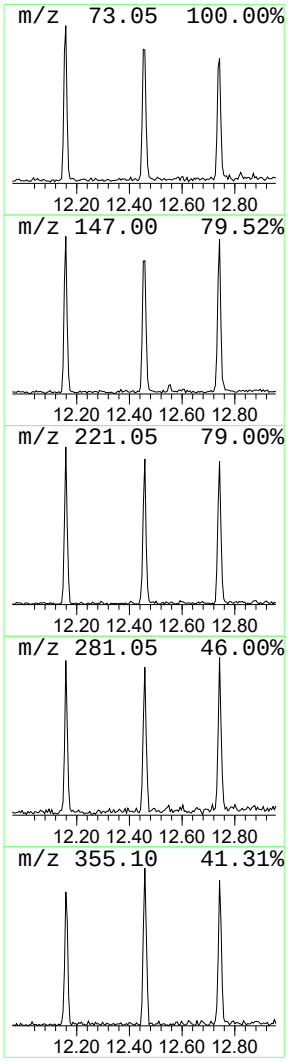
****

Peak Number 49 Siloxane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.458	0.00	1072320	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	74
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	43
3	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	16
4	Mercaptoacetic acid, bis(trimeth...	236	C8H20O2SSi2	006398-62-5	16
5	Trisiloxane, octamethyl-	236	C8H24O2Si3	000107-51-7	14





AECOM_e3g_TPHEXT.M Fri Jan 10 11:15:29 2025 35

Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

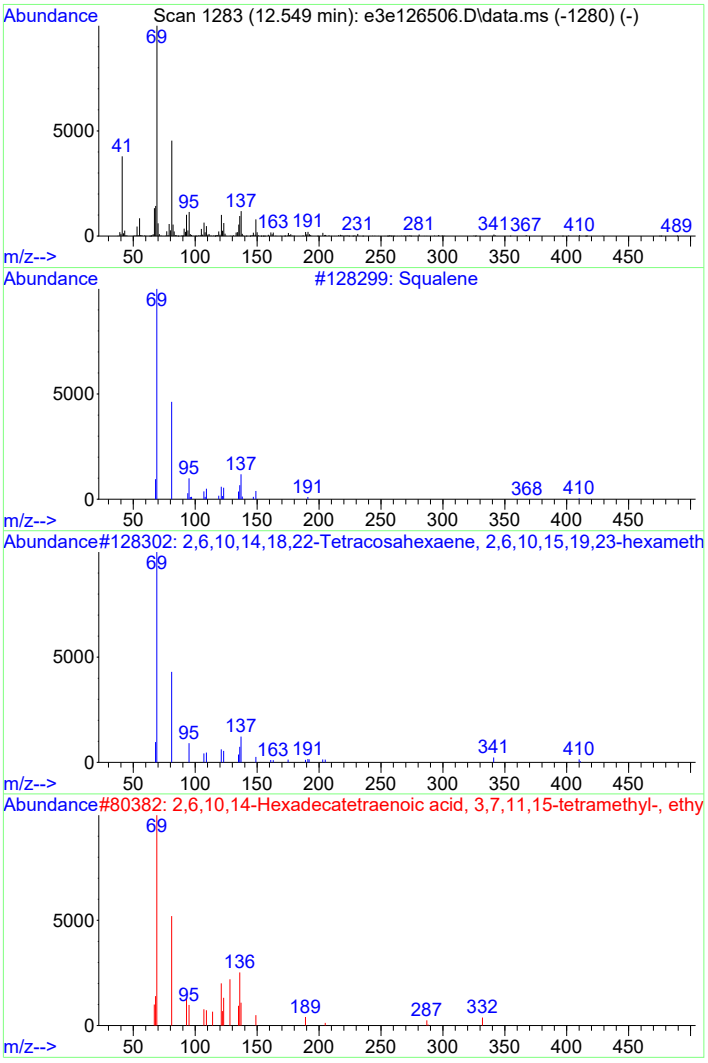
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

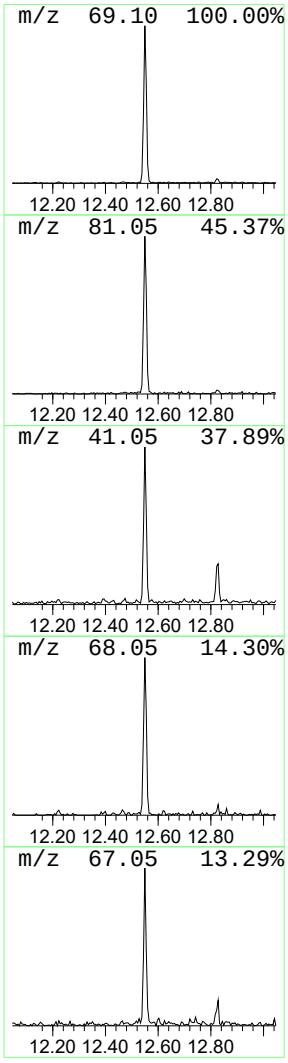
****

Peak Number 51 Squalene Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.549	0.00	1248470	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Squalene	410	C30H50	007683-64-9	98
2	2,6,10,14,18,22-Tetracosahexaene...	410	C30H50	000111-02-4	91
3	2,6,10,14-Hexadecatetraenoic aci...	332	C22H36O2	024035-35-6	78
4	7,11-Dimethyldodeca-2,6,10-trien...	208	C14H24O	125529-10-4	72
5	2,6,10-Dodecatrien-1-ol, 3,7,11-...	222	C15H26O	004602-84-0	72





Library Search Compound Report

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Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

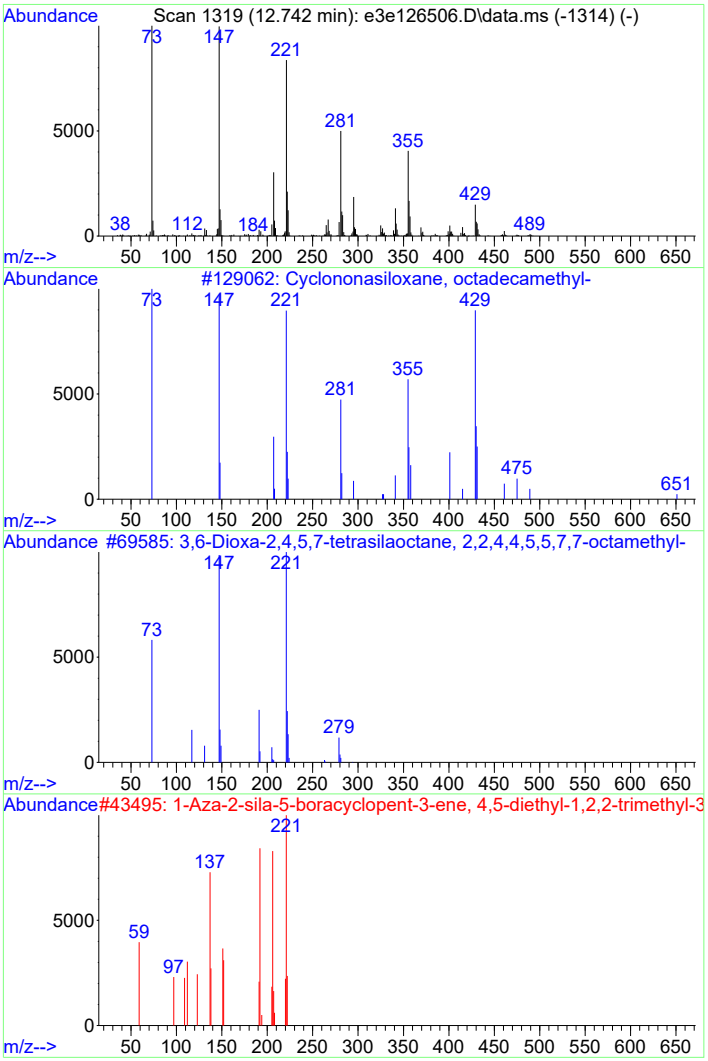
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

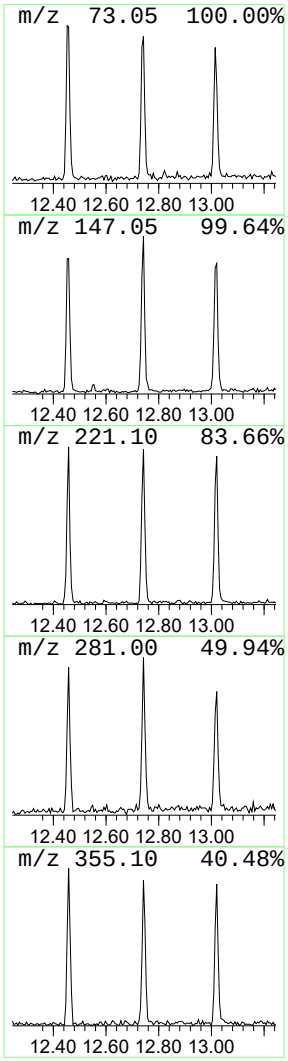
****

Peak Number 53 Siloxane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.742	0.00	1046030	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	78
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	38
3	1-Aza-2-sila-5-boracyclopent-3-e...	221	C12H24BNSi	081620-70-4	22
4	Trisiloxane, octamethyl-	236	C8H24O2Si3	000107-51-7	22
5	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	16





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Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

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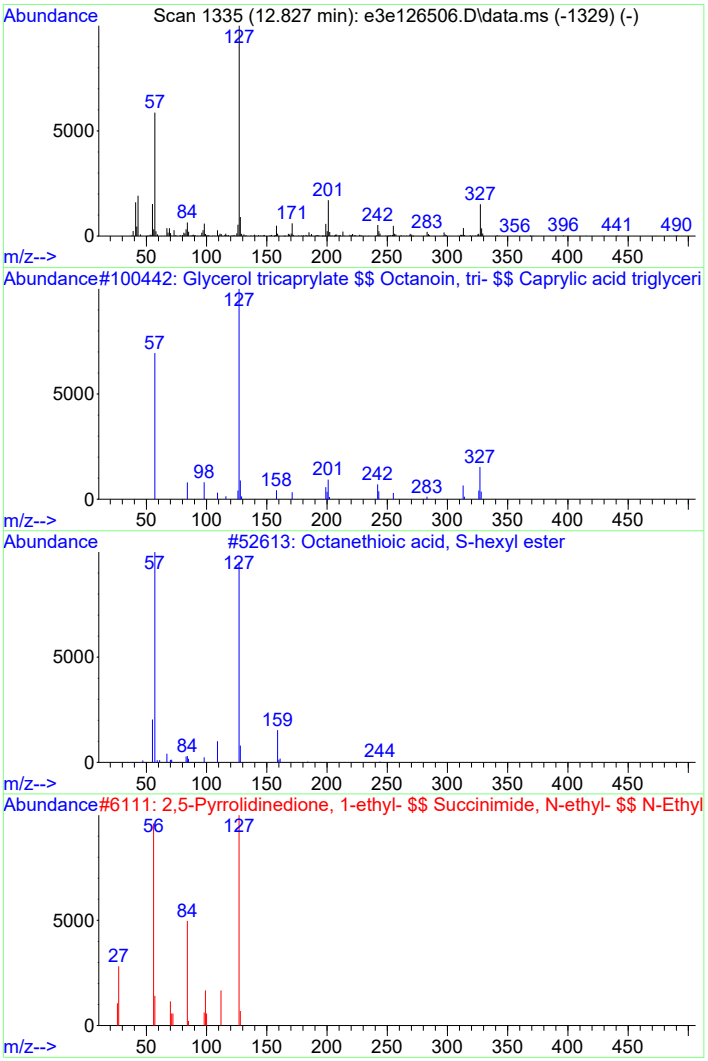
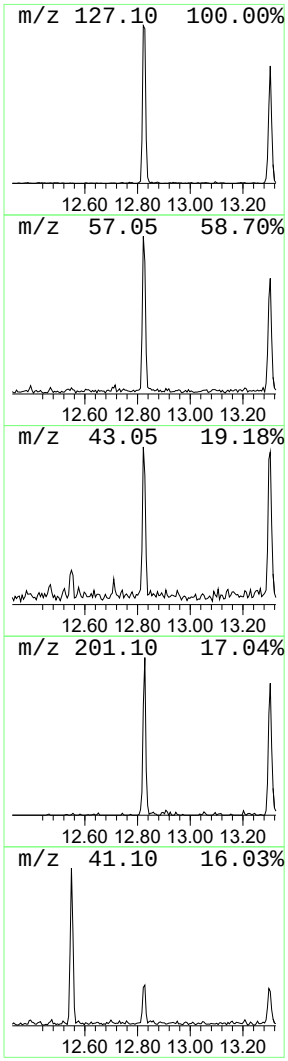
Peak Number 54 Glycerol tricaprylate Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.827	0.00	848422	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Glycerol tricaprylate $$ Octanoi...	470	C27H50O6	000538-23-8	46
2	Octanethioic acid, S-hexyl ester	244	C14H28OS	055590-85-7	42
3	2,5-Pyrrolidinedione, 1-ethyl- $...	127	C6H9NO2	002314-78-5	9
4	Pyrazole, 1-methyl-4-nitro- $$ 1...	127	C4H5N3O2	003994-50-1	9
5	2-Hydroxy-4-hydroxylaminopyrimidine	127	C4H5N3O2	020555-88-8	9





Library Search Compound Report

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Data File : e3e126506.D
Acq On    :  9 Jan 2025    2:03 pm
Operator  : (b) (6)
Sample    : op60797-bs1
Misc      : op60797,e3e5888,1,,,1,1
ALS Vial  : 4   Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)          \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title  : 8270C Calibration

TIC Library   : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

**********************************************************************
Peak Number 55  Siloxane                          Concentration Rank  8
```
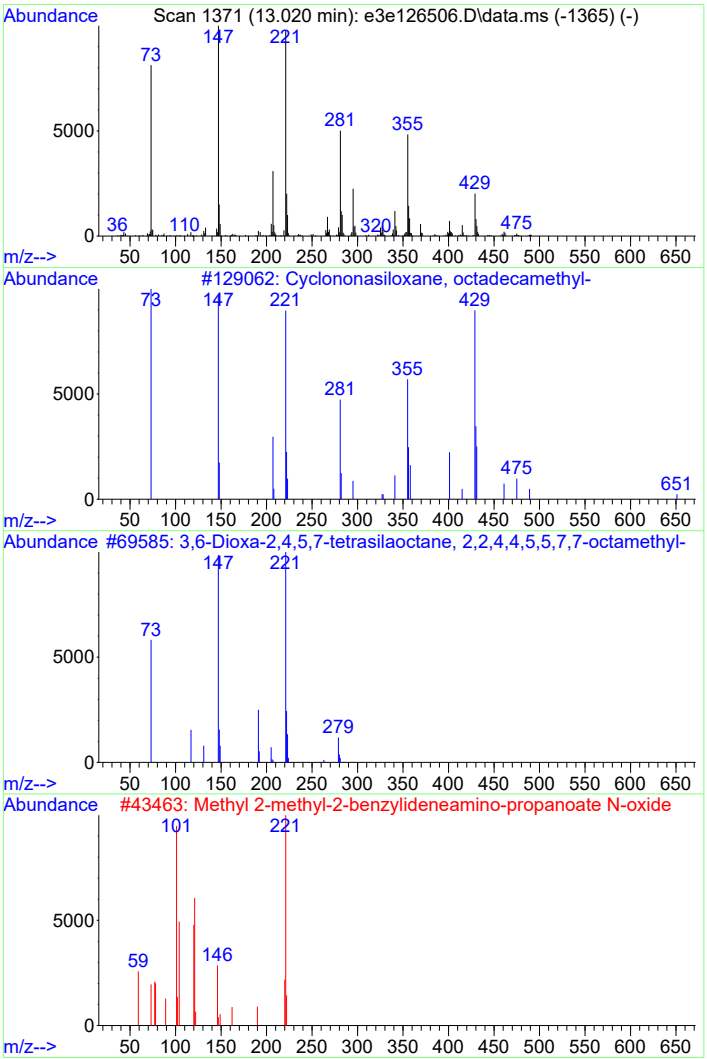
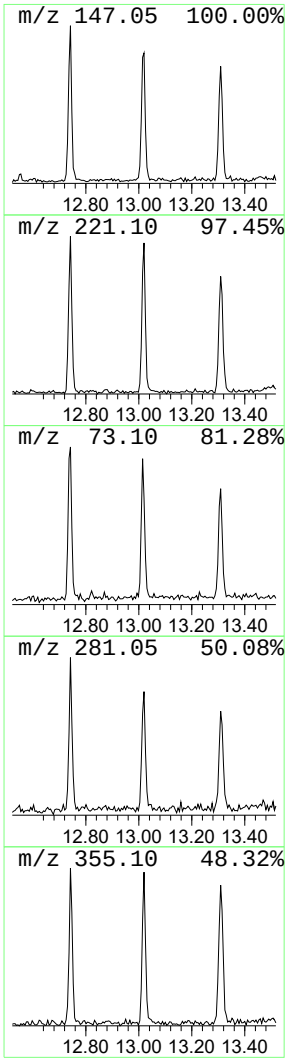

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.020	0.00	988865	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	87
2	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	25
3	Methyl 2-methyl-2-benzylideneami...	221	C12H15NO3	000000-00-0	18
4	Trisiloxane, octamethyl-	236	C8H24O2Si3	000107-51-7	14
5	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	12





Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

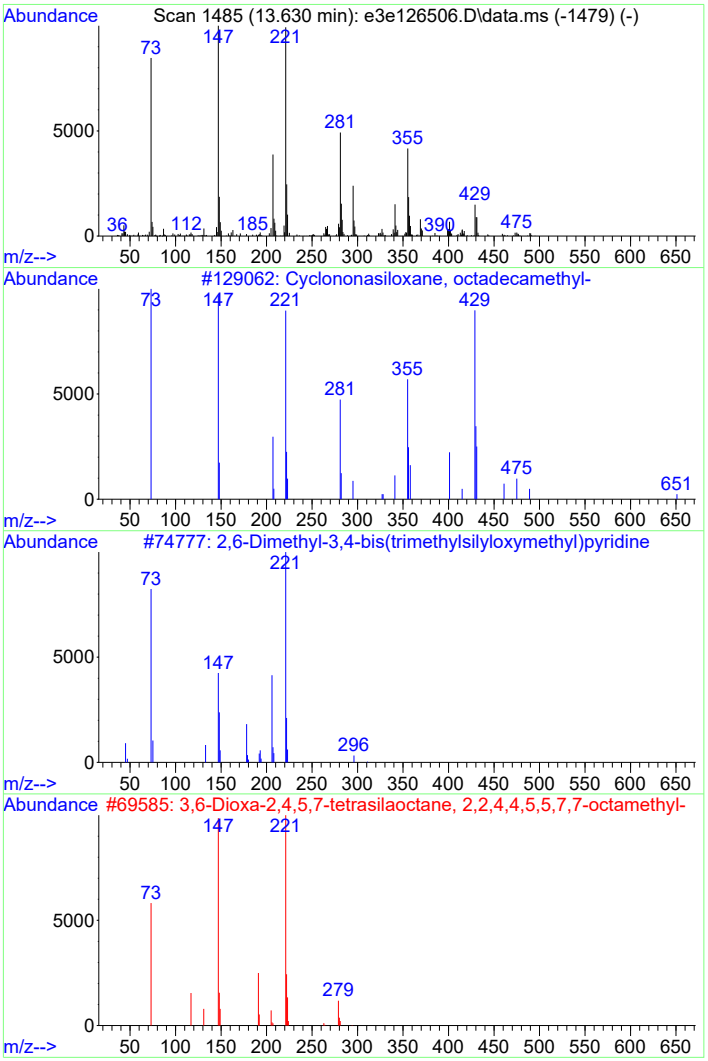
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

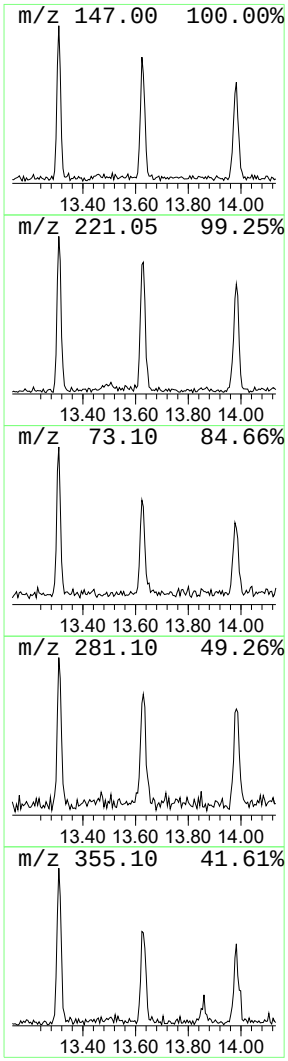
****

Peak Number 60 Siloxane Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.630	0.00	889518	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	87
2	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	25
3	3,6-Dioxa-2,4,5,7-tetrasilaoctan...	294	C10H30O2Si4	004342-25-0	23
4	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	12
5	Malonic acid, 2-(2,3-dihydrobenz...	266	C13H14O6	000000-00-0	12





Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

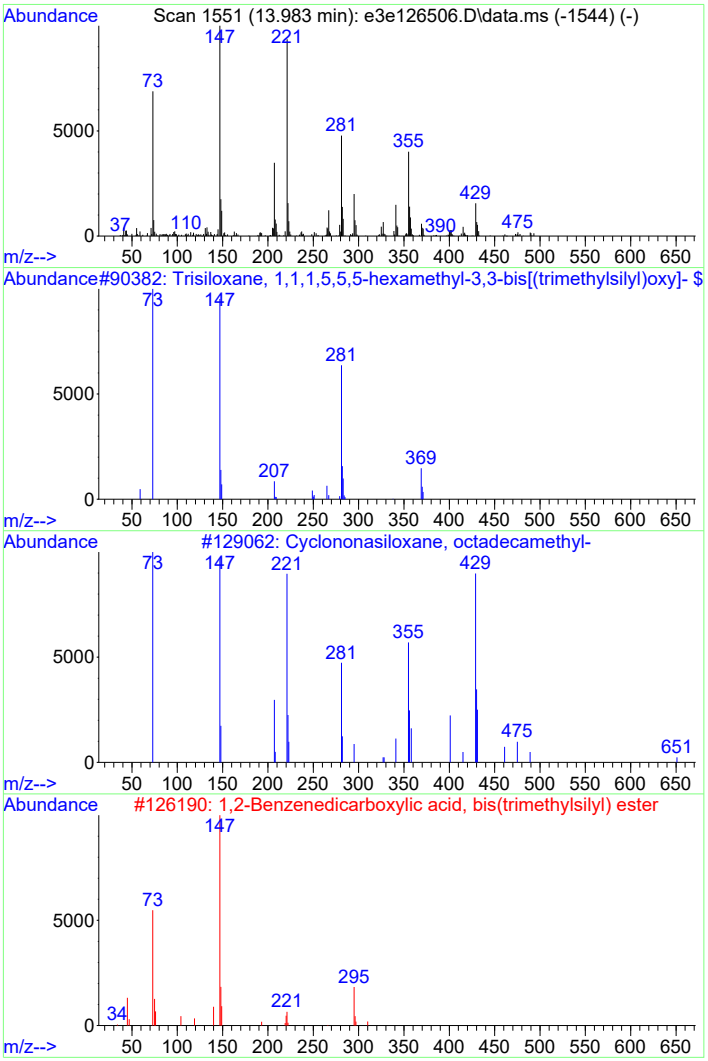
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

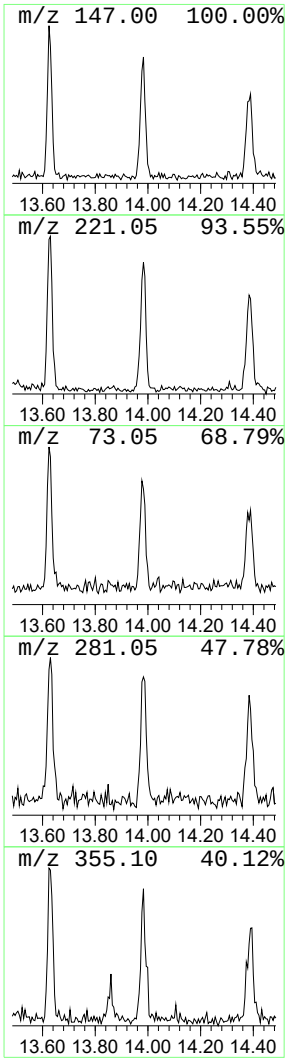
****

Peak Number 63 Siloxane Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.983	0.00	862504	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	27
2	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	25
3	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	22
4	1,2-Benzenedicarboxylic acid, bi...	310	C14H22O4Si2	002078-22-0	22
5	1,3-Benzodioxole, 5-[3-acetamino...	221	C12H15NO3	000000-00-0	14





Library Search Compound Report

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Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

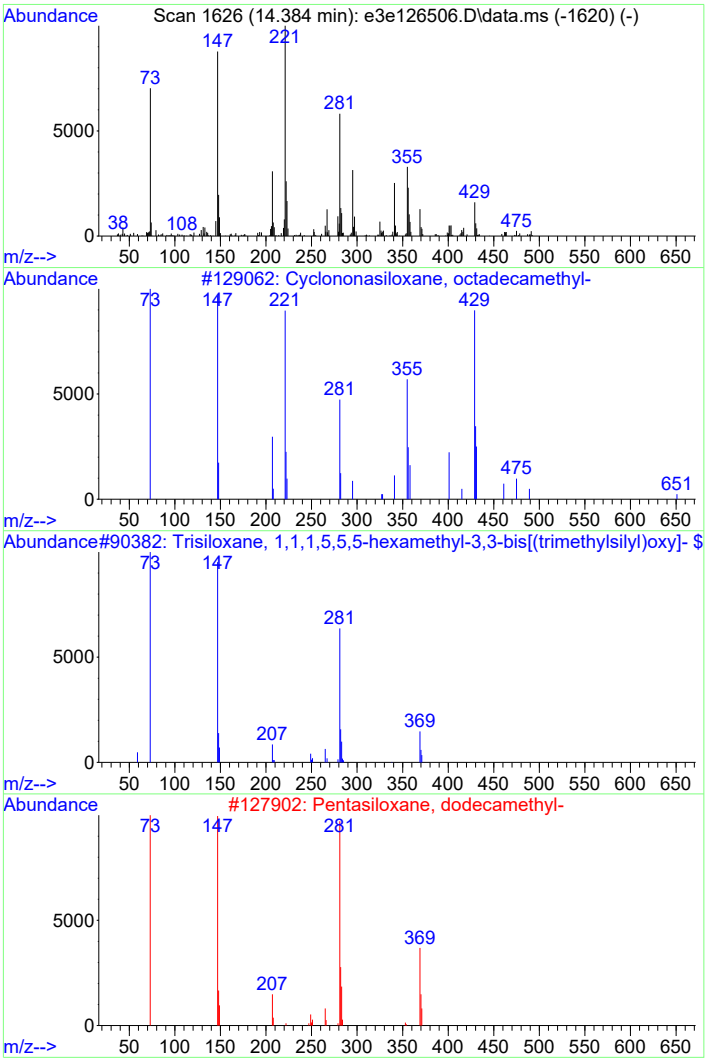
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

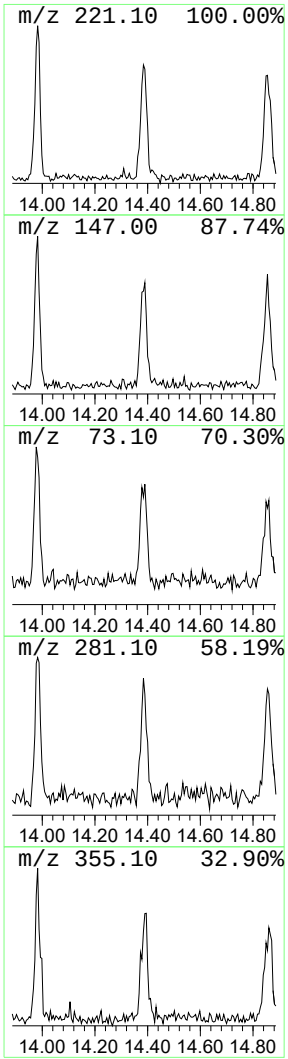
****

Peak Number 64 Siloxane Concentration Rank 18

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.384	0.00	699167	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclononasiloxane, octadecamethyl-	666	C18H54O9Si9	000556-71-8	80
2	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	25
3	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	22
4	Trisiloxane, octamethyl-	236	C8H24O2Si3	000107-51-7	22
5	2,6-Dimethyl-3,4-bis(trimethylsi...	311	C15H29NO2Si2	000000-00-0	22





Library Search Compound Report

Data Path : C:\Users\(b) (6) \Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6) \Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

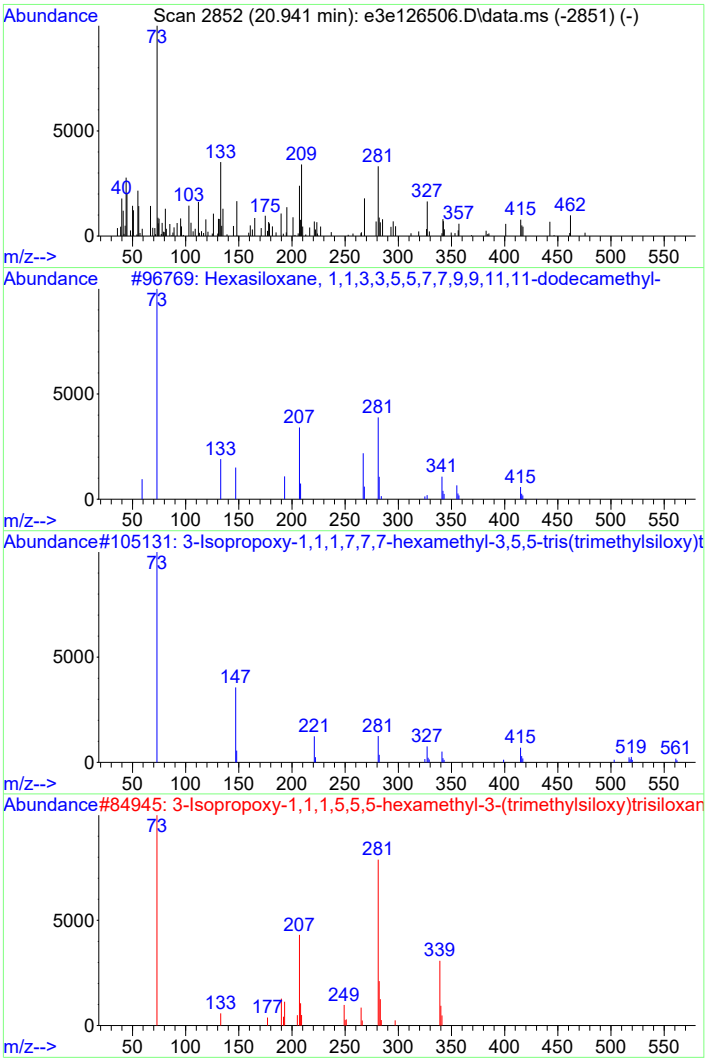
TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

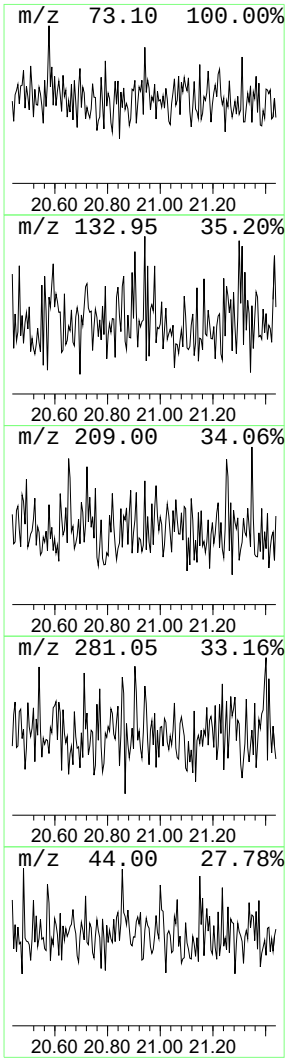
****

Peak Number 76 Siloxane Concentration Rank 68

R.T.	EstConc	Area	Relative to ISTD	R.T.
20.941	0.00	37753	External Standard	0.000

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Hexasiloxane, 1,1,3,3,5,5,7,7,9,...	430	C12H38O5Si6	000995-82-4	35
2	3-Isopropoxy-1,1,1,7,7,7-hexamet...	576	C18H52O7Si7	071579-69-6	12
3	3-Isopropoxy-1,1,1,5,5,5-hexamet...	354	C12H34O4Si4	072182-11-7	10
4	Pentasiloxane, dodecamethyl-	384	C12H36O4Si5	000141-63-9	9
5	Trisiloxane, 1,1,1,5,5,5-hexamet...	384	C12H36O4Si5	003555-47-3	9





AECOM_e3g_TPHEXT.M Fri Jan 10 11:15:42 2025 (b) (4): 43

Tentatively Identified Compound (LSC) summary

Data Path : C:\Users\(b) (6)\Desktop\AECOM\AECOM Screens\ELIPS_SETUP\e3e5888\
Data File : e3e126506.D
Acq On : 9 Jan 2025 2:03 pm
Operator : (b) (6)
Sample : op60797-bs1
Misc : op60797,e3e5888,1,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\Users\(b) (6)\Desktop\AECOM SCREENS\AECOM_e3g_TPHEXT.M
Quant Title : 8270C Calibration

TIC Library : C:\Database\NIST129K.L
TIC Integration Parameters: RTEINT.P

					Internal Standard		
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Alkane	6.639	0.0		339162	0	0.000	1	1.0
Alkane	6.832	0.0		476064	0	0.000	1	1.0
Alkane	6.853	0.0		95691	0	0.000	1	1.0
Benzene, 1-meth...	6.880	0.0		119713	0	0.000	1	1.0
Benzene, 1,3-di...	6.939	0.0		61168	0	0.000	1	1.0
Alkane	6.981	0.0		816731	0	0.000	1	1.0
Alkane	7.361	0.0		266471	0	0.000	1	1.0
Alkane	7.393	0.0		411146	0	0.000	1	1.0
Alkane	7.773	0.0		344806	0	0.000	1	1.0
Alkane	7.800	0.0		624063	0	0.000	1	1.0
Siloxane	7.858	0.0		1311570	0	0.000	1	1.0
Alkane	8.190	0.0		337539	0	0.000	1	1.0
Siloxane	8.452	0.0		689203	0	0.000	1	1.0
Alkane	8.634	0.0		192187	0	0.000	1	1.0
Diphenylamine	9.222	0.0		48873	0	0.000	1	1.0
Diisopropylnaph...	9.335	0.0		81681	0	0.000	1	1.0
Diisopropylnaph...	9.367	0.0		52478	0	0.000	1	1.0
Siloxane	9.511	0.0		502331	0	0.000	1	1.0
Diisopropylnaph...	9.543	0.0		87908	0	0.000	1	1.0
Siloxane	10.800	0.0		484900	0	0.000	1	1.0
Hexadecanamide	10.907	0.0		139406	0	0.000	1	1.0
Siloxane	11.164	0.0		647017	0	0.000	1	1.0
9-Octadecenamide,	11.437	0.0		782801	0	0.000	1	1.0
Siloxane	11.512	0.0		841810	0	0.000	1	1.0
Alkane	11.710	0.0		79267	0	0.000	1	1.0
Siloxane	11.843	0.0		1011440	0	0.000	1	1.0
Alkane	11.966	0.0		49341	0	0.000	1	1.0
Siloxane	12.159	0.0		994516	0	0.000	1	1.0
Alkane	12.223	0.0		59968	0	0.000	1	1.0
Phthalate	12.394	0.0		85902	0	0.000	1	1.0
Siloxane	12.458	0.0		1072320	0	0.000	1	1.0
Squalene	12.549	0.0		1248470	0	0.000	1	1.0
Siloxane	12.742	0.0		1046030	0	0.000	1	1.0
Glycerol tricap...	12.827	0.0		848422	0	0.000	1	1.0
Siloxane	13.020	0.0		988865	0	0.000	1	1.0
Siloxane	13.630	0.0		889518	0	0.000	1	1.0
Siloxane	13.983	0.0		862504	0	0.000	1	1.0
Siloxane	14.384	0.0		699167	0	0.000	1	1.0
Siloxane	20.941	0.0		37753	0	0.000	1	1.0

(b) (4)

SEMIVOLATILE by GCMS ANALYSIS LOG

Date: 1/9/2025

Batch ID:E3e5888

Print Analyst Name: (b) (6)

Analyst Signature: (b) (6)

Columns:
ZB5 MS Plus 30m x .25mm x .25µm
Method:
8270E
Initial Cal. Method:M3ELIPSHEX/

Injection Vol: 5.0 µl

Standard data

Lot#	Description	concentration
sv24-2986-81c	bna	500ppb

Standard data

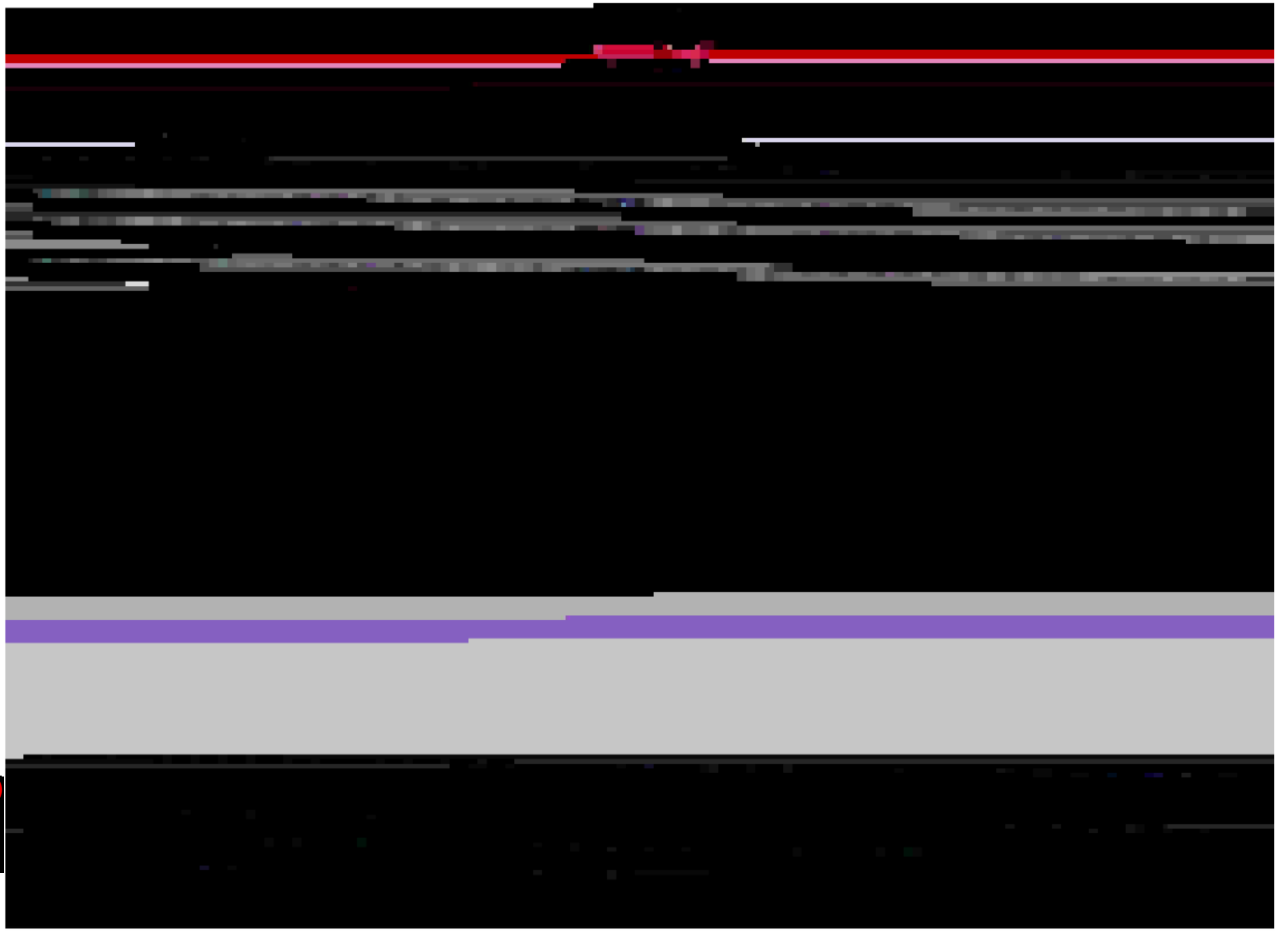
Lot#	Description	concentration
ao214801	Restek IS	4000ppm
24080369	hexane tedia	

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of SGS SOP EQA044.

ALS	Sample ID	Method	File ID	Batch, Run ID, Vi,,,Vf, I	Test Code	IS	SURR	Comments
1	hexane	M3ELIPSHEXANE	e3e126502a	op60797,e3e5888,1000,,,1,1				ok
2	bna 500ppb hexane	M3ELIPSHEXANE	e3e126503	op60797,e3e5888,1000,,,1,1				ok
3	dcm	M3ELIPSHEXANE	e3e126504	op60797,e3e5888,1000,,,1,1				ok
3	dcm	M3ELIPSHEXANE	e3e126505	op60797,e3e5888,1000,,,1,1				ok
4	RT	M3ELIPSHEXANE	e3e126506	op60797,e3e5888,1000,,,1,1				ok
5	RT c10-c40	M3ELIPSHEXANE	e3e126507	op60797,e3e5888,1000,,,1,1				ok
6	jp5	M3ELIPSHEXANE	e3e126508	op60797,e3e5888,1000,,,1,1				ok
7	da69665-7t	M3ELIPSHEXANE	e3e126509	op60797,e3e5888,1000,,,1,1	Ellipse			ok/clear vial
8	da69665-1ta	M3ELIPSHEXANE	e3e126510	op60797,e3e5888,1000,,,1,1	Ellipse			ok/clear vial
9	da69665-7t	M3ELIPSHEXANE	e3e126511	op60797,e3e5888,1000,,,1,1	Ellipse			ok/amber vial
10	da69665-1ta	M3ELIPSHEXANE	e3e126512	op60797,e3e5888,1000,,,1,1	Ellipse			ok/amber vial

(b) (4)

Sample Prep Log OP60797 page 1 of 1



(b) (4)

DA69665T

7.5.1 7

Attachment 5: (b) (4) Laboratory Report L2500383

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2500383
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	CTO24F0139
Project Number:	60729369.00.46.01
Report Date:	01/13/25

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

(b) (4)

(b) (4)

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2500383
Report Date: 01/13/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2500383-01	A3-TW-0016098-24092-N	WATER	HONOLULU, HI	12/30/24 09:08	01/04/25

(b) (4)

Project Name:	CTO24F0139	**Lab Number:**	L2500383
Project Number:	60729369.00.46.01	**Report Date:**	01/13/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383
Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

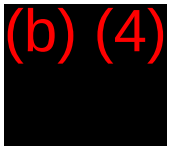
I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

Title: Technical Director/Representative Date: 01/13/25

(b) (4)

ORGANICS



VOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/08/25 15:49
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	126		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	90		70-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/25 17:19
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2017834-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/25 17:19
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2017834-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/25 17:19
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2017834-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/25 17:19
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2017834-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/25 17:19
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2017834-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/25 17:19
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01 Batch: WG2017834-5					
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	98		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2500383
Report Date: 01/13/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2017834-3 WG2017834-4								
1-Pentene	69		64		50-130	8		30
Pentane	67		62		50-130	8		30
Tertiary Butanol	77		88		50-130	13		30
Cyclopentane	69		74		50-130	7		30
2-Methylpentane	78		76		50-130	3		30
Methyl tert butyl ether	94		99		50-130	5		30
3-Methylpentane	86		80		50-130	7		30
1-Hexene	86		80		50-130	7		30
n-Hexane	84		77		50-130	9		30
Isopropyl Ether	97		98		50-130	1		30
Ethyl-Tert-Butyl-Ether	96		99		50-130	3		30
Methylcyclopentane	85		79		50-130	7		30
2,4-Dimethylpentane	89		82		50-130	8		30
Cyclohexane	88		82		50-130	7		30
2-Methylhexane	87		83		50-130	5		30
Benzene	96		93		50-130	3		30
2,3-Dimethylpentane	95		88		50-130	8		30
3-Methylhexane	87		82		50-130	6		30
Tertiary-Amyl Methyl Ether	92		96		50-130	4		30
Isooctane	90		85		50-130	6		30
Heptane	90		84		50-130	7		30
Methylcyclohexane	92		86		50-130	7		30
2-Methylheptane	91		87		50-130	4		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2500383
Report Date: 01/13/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2017834-3 WG2017834-4								
3-Methylheptane	93		86		50-130	8		30
Toluene	98		98		50-130	0		30
Octane	92		88		50-130	4		30
Ethylbenzene	96		97		50-130	1		30
p/m-Xylene	97		102		50-130	5		30
Nonane (C9)	86		89		50-130	3		30
o-Xylene	100		106		50-130	6		30
Isopropylbenzene	97		100		50-130	3		30
n-Propylbenzene	98		102		50-130	4		30
1-Methyl-3-Ethylbenzene	96		103		50-130	7		30
1-Methyl-4-Ethylbenzene	99		106		50-130	7		30
1,3,5-Trimethylbenzene	96		104		50-130	8		30
1-Decene	74		76		50-130	3		30
1-Methyl-2-Ethylbenzene	98		105		50-130	7		30
Decane (C10)	92		94		50-130	2		30
1,2,4-Trimethylbenzene	94		103		50-130	9		30
sec-Butylbenzene	98		104		50-130	6		30
1-Methyl-4-N-Propylbenzene	90		98		50-130	9		30
n-Butylbenzene	96		104		50-130	8		30
1,2-Diethylbenzene	98		108		50-130	10		30
Undecane	101		99		50-130	2		30
N-Pentylbenzene	96		102		50-130	6		30
Dodecane (C12)	118		122		50-130	3		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01 Batch: WG2017834-3 WG2017834-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	91		87		70-130
Toluene-d8	93		90		70-130
4-Bromofluorobenzene	101		106		70-130

(b) (4)

SEMIVOLATILES

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/08/25 05:44
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.95	2.68	1
C1-Decalins	ND		ng/l	4.95	2.68	1
C2-Decalins	ND		ng/l	4.95	2.68	1
C3-Decalins	ND		ng/l	4.95	2.68	1
C4-Decalins	ND		ng/l	4.95	2.68	1
Naphthalene	ND		ng/l	9.90	2.71	1
C1-Naphthalenes	ND		ng/l	9.90	2.71	1
C2-Naphthalenes	ND		ng/l	9.90	2.71	1
C3-Naphthalenes	ND		ng/l	9.90	2.71	1
C4-Naphthalenes	ND		ng/l	9.90	2.71	1
2-Methylnaphthalene	ND		ng/l	9.90	6.56	1
1-Methylnaphthalene	ND		ng/l	9.90	4.29	1
Benzothiophene	ND		ng/l	9.90	2.55	1
C1-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C2-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C3-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C4-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
Biphenyl	ND		ng/l	9.90	2.11	1
2,6-Dimethylnaphthalene	ND		ng/l	9.90	3.02	1
Dibenzofuran	ND		ng/l	9.90	3.71	1
Acenaphthylene	ND		ng/l	9.90	5.18	1
Acenaphthene	ND		ng/l	9.90	3.61	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.90	1.90	1
Fluorene	ND		ng/l	9.90	4.21	1
C1-Fluorenes	ND		ng/l	9.90	4.21	1
C2-Fluorenes	ND		ng/l	9.90	4.21	1
C3-Fluorenes	ND		ng/l	9.90	4.21	1
Dibenzothiophene	ND		ng/l	9.90	3.31	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - [redacted]						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.90	3.31	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.90	3.31	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.90	3.31	1
C1-Dibenzothiophenes BS	ND		ng/l	9.90	3.31	1
C2-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C3-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C4-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
Phenanthrene	ND		ng/l	9.90	5.91	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.90	5.91	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.90	5.91	1
2-Methylanthracene (2MA)	ND		ng/l	9.90	5.91	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.90	5.91	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.90	5.91	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.90	5.91	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
Retene	ND		ng/l	9.90	5.99	1
Anthracene	ND		ng/l	9.90	3.40	1
Carbazole	ND		ng/l	9.90	5.37	1
Fluoranthene	ND		ng/l	9.90	6.62	1
Benzo(b)fluorene	ND		ng/l	9.90	4.60	1
7H-Benzo(c)fluorene	ND		ng/l	9.90	4.60	1
2-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
4-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
1-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
Pyrene	ND		ng/l	9.90	6.99	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C1-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C2-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C3-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C4-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
Benz(a)anthracene	ND		ng/l	9.90	5.97	1

[redacted]

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.90	7.02	1
C1-Chrysenes	ND		ng/l	9.90	7.02	1
C2-Chrysenes BS	ND		ng/l	9.90	7.02	1
C3-Chrysenes	ND		ng/l	9.90	7.02	1
C4-Chrysenes	ND		ng/l	9.90	7.02	1
Benzo(b)fluoranthene	ND		ng/l	9.90	7.17	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(a)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(e)pyrene	ND		ng/l	9.90	7.07	1
Benzo(a)pyrene	ND		ng/l	9.90	7.53	1
Perylene	ND		ng/l	9.90	4.55	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.90	9.50	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.90	6.42	1
Benzo(g,h,i)perylene	ND		ng/l	9.90	6.53	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	79		50-130
Phenanthrene-d10	90		50-130
Benzo(a)pyrene-d12	102		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/08/25 01:32
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL
PAHs (b) (4) for sample(s): 01 Batch: WG2016796-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/08/25 01:32
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2016796-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/08/25 01:32
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 01 Batch: WG2016796-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	81		50-130
Phenanthrene-d10	96		50-130
Benzo(a)pyrene-d12	108		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2500383
Report Date: 01/13/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - [redacted] Associated sample(s): 01 Batch: WG2016796-2 WG2016796-3								
Naphthalene	99		97		50-130	2		30
2-Methylnaphthalene	92		91		50-130	1		30
Acenaphthylene	90		91		50-130	1		30
Acenaphthene	93		93		50-130	0		30
Fluorene	103		103		50-130	0		30
Phenanthrene	102		102		50-130	0		30
Anthracene	111		112		50-130	1		30
Fluoranthene	99		98		50-130	1		30
Pyrene	106		106		50-130	0		30
Benz(a)anthracene	100		101		50-130	1		30
Chrysene/Triphenylene	97		99		50-130	2		30
Benzo(b)fluoranthene	98		100		50-130	2		30
Benzo(j)+(k)fluoranthene	105		107		50-130	2		30
Benzo(a)pyrene	106		108		50-130	2		30
Indeno(1,2,3-cd)pyrene	98		97		50-130	1		30
Dibenz(a,h)+(a,c)anthracene	103		105		50-130	2		30
Benzo(g,h,i)perylene	94		96		50-130	2		30

[redacted]

Lab Control Sample Analysis

Batch Quality Control

Project Name: CTO24F0139

Project Number: 60729369.00.46.01

Lab Number: L2500383

Report Date: 01/13/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 01 Batch: WG2016796-2 WG2016796-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	87		85		50-130
Phenanthrene-d10	107		106		50-130
Benzo(a)pyrene-d12	115		115		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/07/25 04:54
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0005	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0005	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: CTO24F0139 Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

SAMPLE RESULTS

Lab ID: L2500383-01
Client ID: A3-TW-0016098-24092-N
Sample Location: HONOLULU, HI

Date Collected: 12/30/24 09:08
Date Received: 01/04/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.027	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	81		50-130
d50-Tetracosane	78		50-130

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/06/25 18:36
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2016796-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	0.0004	J	mg/l	0.0010	0.0003
n-Heptacosane (C27)	0.0004	J	mg/l	0.0010	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	0.0002	J	mg/l	0.0010	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/06/25 18:36
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/06/25 10:48

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 01 Batch: WG2016796-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	0.001	J	mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	88		50-130
d50-Tetracosane	85		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: CTO24F0139
Project Number: 60729369.00.46.01

Lab Number: L2500383
Report Date: 01/13/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - (b) (4) Associated sample(s): 01 Batch: WG2016796-2 WG2016796-3								
Nonane (C9)	79		70		50-130	12		30
n-Decane (C10)	82		76		50-130	8		30
n-Dodecane (C12)	90		84		50-130	7		30
n-Tetradecane (C14)	88		87		50-130	1		30
n-Hexadecane (C16)	93		93		50-130	0		30
n-Octadecane (C18)	97		98		50-130	1		30
n-Nonadecane (C19)	93		93		50-130	0		30
n-Eicosane (C20)	95		95		50-130	0		30
n-Docosane (C22)	92		92		50-130	0		30
n-Tetracosane (C24)	98		98		50-130	0		30
n-Hexacosane (C26)	92		92		50-130	0		30
n-Octacosane (C28)	92		91		50-130	1		30
n-Triacontane (C30)	92		92		50-130	0		30
n-Hexatriacontane (C36)	84		81		50-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	95		96		50-130
d50-Tetracosane	92		92		50-130

(b) (4)

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Present/Intact

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2500383-01A	Vial Ascorbic Acid/HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2500383-01B	Vial Ascorbic Acid/HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2500383-01C	Vial Ascorbic Acid/HCl preserved	A	NA		4.1	Y	Present/Intact		A2-PIANO8260(14)
L2500383-01D	Amber 1L Na2S2O3	A	7	7	4.1	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2500383-01E	Amber 1L Na2S2O3	A	7	7	4.1	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

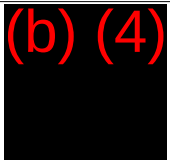
STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

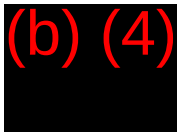
G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name:	CTO24F0139	**Lab Number:**	L2500383
Project Number:	60729369.00.46.01	**Report Date:**	01/13/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: CTO24F0139 **Lab Number:** L2500383

Project Number: 60729369.00.46.01 **Report Date:** 01/13/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

(b) (4)
Alpha SOP 23528

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

(b) (4)

CHAIN OF CUSTODY

PAGE OF

Project Information

Project Name: CTO24F0139

Project Location: Honolulu, HI

Project #: 60729369.00.46.01

Project Manager: (b) (6)

(b) (4) Quote #:

Client Information

Client: AECOM

Address: 1001 Bishop Street #1600

Honolulu, HI 96813

Phone: (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

EDMS DB: JBPHH Drinking Water LTM; Event: EDWM A3 Residentia Samplingl; Zone: A3

☐ MS/MSD (at unit cost) will be omitted unless you check here

Date Rec'd in Lab: 1/4/25

(b) (4) Job #: L2500383

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☒ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 1677061

Regulatory Requirements/Report Limits

State/Fed Program Criteria

ANALYSIS

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 SIM Parent and Alkylated PAHs	8015 Sat Hydrocarbons	8260 PIANO + TICs	TOTAL # BOTTLES	Sample Specific Comments
00383-01	A3-TW-0016098-24092-N	12/30/24	09:08	DW		☒	☒	☒		

SAMPLE HANDLING

Filtration

☐ Done ☐ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Container Type

Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
FedEx	1/4/25 11:40	(b) (6)	1/4/25 11:40

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 101-03S-N.2 (rev. 9-JAN-12)

(b) (4)

Customer
1-3-2025

00943

(b) (6)

Appendix C. Tier 1 Analysis Tech Memos

Attachment 6: (b) (4) Laboratory Report L2501741

Appendix C. Tier 1 Analysis Tech Memos

(b) (4)

ANALYTICAL REPORT

Lab Number:	L2501741
Client:	AECOM 250 Apollo Drive Chelmsford, MA 01824
ATTN:	(b) (6)
Phone:	(b) (6)
Project Name:	EDWM
Project Number:	60729369
Report Date:	01/20/25

The original project report/data package is held by (b) (4). This report/data package is paginated and should be reproduced only in its entirety. (b) (4) holds no responsibility for results and/or data that are not consistent with the original.

(b) (4)

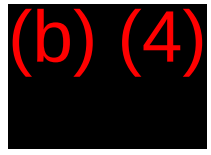
(b) (4)

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2501741-01	A3-TB-250110-24092-N	WATER	HONOLULU, HI	01/10/25 08:25	01/11/25
L2501741-02	A3-TW-0016098-24092-N-R1	WATER	HONOLULU, HI	01/10/25 08:49	01/11/25
L2501741-03	A3-TW-0016098-24092-N-1	WATER	HONOLULU, HI	01/10/25 09:08	01/11/25
L2501741-04	A3-TW-0016098-24092-N-2	WATER	HONOLULU, HI	01/10/25 09:34	01/11/25



Project Name:	EDWM	**Lab Number:**	L2501741
Project Number:	60729369	**Report Date:**	01/20/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this (b) (4) Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, (b) (4) policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your (b) (4) Project Manager and made arrangements for (b) (4) to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at (b) (4) with any questions.

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2501741
Project Number:	60729369	**Report Date:**	01/20/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2501741-01: The surrogate recovery is above the acceptance criteria for dibromofluoromethane (133%). Since the sample was non-detect for all associated target analytes, re-analysis was not required.

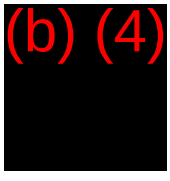
I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: (b) (6)

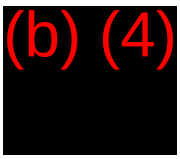
Title: Technical Director/Representative Date: 01/20/25

(b) (4)

ORGANICS



VOLATILES



Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-01
Client ID: A3-TB-250110-24092-N
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:25
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/14/25 10:36
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-01
Client ID: A3-TB-250110-24092-N
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:25
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-01
Client ID: A3-TB-250110-24092-N
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:25
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-01
Client ID: A3-TB-250110-24092-N
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:25
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-01
Client ID: A3-TB-250110-24092-N
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:25
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	**133**	Q	70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	89		70-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/14/25 11:44
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	127		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	90		70-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/14/25 12:53
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	129		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	89		70-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/14/25 14:02
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	ND		ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	ND		ug/l	2.00	0.311	1
Pentane	ND		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	ND		ug/l	2.00	0.617	1
4-Methyl-1-pentene	ND		ug/l	2.00	0.311	1
Cyclopentane	ND		ug/l	2.00	0.519	1
2,3-Dimethylbutane	ND		ug/l	2.00	0.826	1
2-Methylpentane	ND		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	ND		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	ND		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	ND		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	ND		ug/l	2.00	0.269	1
Methylcyclopentane	ND		ug/l	2.00	0.268	1
2,4-Dimethylpentane	ND		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
3,3-Dimethylpentane	ND		ug/l	2.00	0.372	1
Cyclohexane	ND		ug/l	2.00	0.247	1
2-Methylhexane	ND		ug/l	2.00	0.315	1
Benzene	ND		ug/l	2.00	0.305	1
2,3-Dimethylpentane	ND		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240	1
3-Methylhexane	ND		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301	1
3-Ethylpentane	ND		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	ND		ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	ND		ug/l	2.00	0.270	1
2,5-Dimethylhexane	ND		ug/l	2.00	0.348	1
2,4-Dimethylhexane	ND		ug/l	2.00	0.243	1
Ethylcyclopentane	ND		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397	1
2,3-Dimethylhexane	ND		ug/l	2.00	0.485	1
2-Methylheptane	ND		ug/l	2.00	0.338	1
4-Methylheptane	ND		ug/l	2.00	0.344	1
3-Methylheptane	ND		ug/l	2.00	0.385	1
3-Ethylhexane	ND		ug/l	2.00	0.358	1
Toluene	ND		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	ND		ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581	1
2,5-Dimethylheptane	ND		ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199	1
2,3-Dimethylheptane	ND		ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	ND		ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	ND		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	ND		ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	ND		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
Xylene (Total)[1]	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	ND		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	ND		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	ND		ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207	1
Isobutylbenzene	ND		ug/l	2.00	0.270	1
sec-Butylbenzene	ND		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217	1
Indane	ND		ug/l	2.00	0.123	1
1,3-Diethylbenzene	ND		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202	1
Indene	ND		ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250	1
n-Butylbenzene	ND		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245	1
1,2-Diethylbenzene	ND		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	ND		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - (b) (4)						
2-Methylnaphthalene	ND		ug/l	5.00	1.32	1
1-Methylnaphthalene	ND		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	127		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	89		70-130

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/13/25 15:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2019800-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/13/25 15:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2019800-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385
3-Ethylhexane	ND		ug/l	2.00	0.358

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/13/25 15:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2019800-5					
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311
Styrene	ND		ug/l	2.00	0.202

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/13/25 15:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2019800-5					
o-Xylene	ND		ug/l	2.00	0.209
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/13/25 15:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4) for sample(s): 01-04 Batch: WG2019800-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/13/25 15:20
Analyst: (b) (6)

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - (b) (4)	for sample(s):	01-04	Batch:	WG2019800-5	
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	127		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	89		70-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-04 Batch: WG2019800-3 WG2019800-4								
1-Pentene	58		56		50-130	4		30
Pentane	55		54		50-130	2		30
Tertiary Butanol	74		76		50-130	3		30
Cyclopentane	65		68		50-130	5		30
2-Methylpentane	69		66		50-130	4		30
Methyl tert butyl ether	88		93		50-130	6		30
3-Methylpentane	72		70		50-130	3		30
1-Hexene	76		70		50-130	8		30
n-Hexane	70		66		50-130	6		30
Isopropyl Ether	90		89		50-130	1		30
Ethyl-Tert-Butyl-Ether	90		91		50-130	1		30
Methylcyclopentane	72		70		50-130	3		30
2,4-Dimethylpentane	76		74		50-130	3		30
Cyclohexane	75		72		50-130	4		30
2-Methylhexane	76		74		50-130	3		30
Benzene	88		85		50-130	3		30
2,3-Dimethylpentane	82		79		50-130	4		30
3-Methylhexane	76		73		50-130	4		30
Tertiary-Amyl Methyl Ether	88		90		50-130	2		30
Isooctane	79		76		50-130	4		30
Heptane	79		76		50-130	4		30
Methylcyclohexane	80		76		50-130	5		30
2-Methylheptane	80		79		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-04 Batch: WG2019800-3 WG2019800-4								
3-Methylheptane	82		81		50-130	1		30
Toluene	92		89		50-130	3		30
Octane	83		80		50-130	4		30
Ethylbenzene	92		90		50-130	2		30
p/m-Xylene	95		94		50-130	1		30
Nonane (C9)	82		82		50-130	0		30
o-Xylene	99		100		50-130	1		30
Isopropylbenzene	94		92		50-130	2		30
n-Propylbenzene	95		95		50-130	0		30
1-Methyl-3-Ethylbenzene	94		96		50-130	2		30
1-Methyl-4-Ethylbenzene	98		100		50-130	2		30
1,3,5-Trimethylbenzene	96		98		50-130	2		30
1-Decene	68		69		50-130	1		30
1-Methyl-2-Ethylbenzene	96		100		50-130	4		30
Decane (C10)	88		87		50-130	1		30
1,2,4-Trimethylbenzene	94		98		50-130	4		30
sec-Butylbenzene	98		98		50-130	0		30
1-Methyl-4-N-Propylbenzene	90		93		50-130	3		30
n-Butylbenzene	97		98		50-130	1		30
1,2-Diethylbenzene	100		102		50-130	2		30
Undecane	94		92		50-130	2		30
N-Pentylbenzene	96		96		50-130	0		30
Dodecane (C12)	113		114		50-130	1		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - (b) (4) Associated sample(s): 01-04 Batch: WG2019800-3 WG2019800-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	109		107		70-130
Toluene-d8	107		105		70-130
4-Bromofluorobenzene	96		97		70-130

(b) (4)

SEMIVOLATILES

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/14/25 20:07
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.90	2.66	1
C1-Decalins	ND		ng/l	4.90	2.66	1
C2-Decalins	ND		ng/l	4.90	2.66	1
C3-Decalins	ND		ng/l	4.90	2.66	1
C4-Decalins	ND		ng/l	4.90	2.66	1
Naphthalene	ND		ng/l	9.80	2.69	1
C1-Naphthalenes	ND		ng/l	9.80	2.69	1
C2-Naphthalenes	ND		ng/l	9.80	2.69	1
C3-Naphthalenes	ND		ng/l	9.80	2.69	1
C4-Naphthalenes	ND		ng/l	9.80	2.69	1
2-Methylnaphthalene	ND		ng/l	9.80	6.50	1
1-Methylnaphthalene	ND		ng/l	9.80	4.24	1
Benzothiophene	ND		ng/l	9.80	2.53	1
C1-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C2-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C3-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
C4-Benzo(b)thiophenes	ND		ng/l	9.80	2.53	1
Biphenyl	ND		ng/l	9.80	2.09	1
2,6-Dimethylnaphthalene	ND		ng/l	9.80	2.99	1
Dibenzofuran	ND		ng/l	9.80	3.68	1
Acenaphthylene	ND		ng/l	9.80	5.13	1
Acenaphthene	ND		ng/l	9.80	3.58	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.80	1.88	1
Fluorene	ND		ng/l	9.80	4.17	1
C1-Fluorenes	ND		ng/l	9.80	4.17	1
C2-Fluorenes	ND		ng/l	9.80	4.17	1
C3-Fluorenes	ND		ng/l	9.80	4.17	1
Dibenzothiophene	ND		ng/l	9.80	3.27	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02 Date Collected: 01/10/25 08:49

Client ID: A3-TW-0016098-24092-N-R1 Date Received: 01/11/25

Sample Location: HONOLULU, HI Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.80	3.27	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.80	3.27	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.80	3.27	1
C1-Dibenzothiophenes BS	ND		ng/l	9.80	3.27	1
C2-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C3-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
C4-Dibenzothiophenes	ND		ng/l	9.80	3.27	1
Phenanthrene	ND		ng/l	9.80	5.85	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.80	5.85	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.80	5.85	1
2-Methylanthracene (2MA)	ND		ng/l	9.80	5.85	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.80	5.85	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.80	5.85	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.80	5.85	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.80	5.85	1
Retene	ND		ng/l	9.80	5.93	1
Anthracene	ND		ng/l	9.80	3.37	1
Carbazole	ND		ng/l	9.80	5.31	1
Fluoranthene	ND		ng/l	9.80	6.56	1
Benzo(b)fluorene	ND		ng/l	9.80	4.56	1
7H-Benzo(c)fluorene	ND		ng/l	9.80	4.56	1
2-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
4-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
1-Methylpyrene[1]	ND		ng/l	9.80	6.92	1
Pyrene	ND		ng/l	9.80	6.92	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.80	6.92	1
Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C1-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C2-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C3-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
C4-Naphthobenzothiophenes	ND		ng/l	9.80	4.28	1
Benz(a)anthracene	ND		ng/l	9.80	5.91	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.80	6.95	1
C1-Chrysenes	ND		ng/l	9.80	6.95	1
C2-Chrysenes BS	ND		ng/l	9.80	6.95	1
C3-Chrysenes	ND		ng/l	9.80	6.95	1
C4-Chrysenes	ND		ng/l	9.80	6.95	1
Benzo(b)fluoranthene	ND		ng/l	9.80	7.10	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(a)fluoranthene	ND		ng/l	9.80	6.33	1
Benzo(e)pyrene	ND		ng/l	9.80	7.00	1
Benzo(a)pyrene	ND		ng/l	9.80	7.46	1
Perylene	ND		ng/l	9.80	4.51	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.80	9.41	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.80	6.36	1
Benzo(g,h,i)perylene	ND		ng/l	9.80	6.47	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	78		50-130
Phenanthrene-d10	86		50-130
Benzo(a)pyrene-d12	89		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369

Appendix C. Tier 1 Analysis Tech Memos

Lab Number: L2501741
Report Date: 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/14/25 21:31
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.95	2.68	1
C1-Decalins	ND		ng/l	4.95	2.68	1
C2-Decalins	ND		ng/l	4.95	2.68	1
C3-Decalins	ND		ng/l	4.95	2.68	1
C4-Decalins	ND		ng/l	4.95	2.68	1
Naphthalene	ND		ng/l	9.90	2.71	1
C1-Naphthalenes	ND		ng/l	9.90	2.71	1
C2-Naphthalenes	ND		ng/l	9.90	2.71	1
C3-Naphthalenes	ND		ng/l	9.90	2.71	1
C4-Naphthalenes	ND		ng/l	9.90	2.71	1
2-Methylnaphthalene	ND		ng/l	9.90	6.56	1
1-Methylnaphthalene	ND		ng/l	9.90	4.29	1
Benzothiophene	ND		ng/l	9.90	2.55	1
C1-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C2-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C3-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C4-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
Biphenyl	ND		ng/l	9.90	2.11	1
2,6-Dimethylnaphthalene	ND		ng/l	9.90	3.02	1
Dibenzofuran	ND		ng/l	9.90	3.71	1
Acenaphthylene	ND		ng/l	9.90	5.18	1
Acenaphthene	ND		ng/l	9.90	3.61	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.90	1.90	1
Fluorene	ND		ng/l	9.90	4.21	1
C1-Fluorenes	ND		ng/l	9.90	4.21	1
C2-Fluorenes	ND		ng/l	9.90	4.21	1
C3-Fluorenes	ND		ng/l	9.90	4.21	1
Dibenzothiophene	ND		ng/l	9.90	3.31	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.90	3.31	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.90	3.31	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.90	3.31	1
C1-Dibenzothiophenes BS	ND		ng/l	9.90	3.31	1
C2-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C3-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C4-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
Phenanthrene	ND		ng/l	9.90	5.91	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.90	5.91	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.90	5.91	1
2-Methylanthracene (2MA)	ND		ng/l	9.90	5.91	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.90	5.91	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.90	5.91	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.90	5.91	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
Retene	ND		ng/l	9.90	5.99	1
Anthracene	ND		ng/l	9.90	3.40	1
Carbazole	ND		ng/l	9.90	5.37	1
Fluoranthene	ND		ng/l	9.90	6.62	1
Benzo(b)fluorene	ND		ng/l	9.90	4.60	1
7H-Benzo(c)fluorene	ND		ng/l	9.90	4.60	1
2-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
4-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
1-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
Pyrene	ND		ng/l	9.90	6.99	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C1-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C2-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C3-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C4-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
Benz(a)anthracene	ND		ng/l	9.90	5.97	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.90	7.02	1
C1-Chrysenes	ND		ng/l	9.90	7.02	1
C2-Chrysenes BS	ND		ng/l	9.90	7.02	1
C3-Chrysenes	ND		ng/l	9.90	7.02	1
C4-Chrysenes	ND		ng/l	9.90	7.02	1
Benzo(b)fluoranthene	ND		ng/l	9.90	7.17	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(a)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(e)pyrene	ND		ng/l	9.90	7.07	1
Benzo(a)pyrene	ND		ng/l	9.90	7.53	1
Perylene	ND		ng/l	9.90	4.55	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.90	9.50	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.90	6.42	1
Benzo(g,h,i)perylene	ND		ng/l	9.90	6.53	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	82		50-130
Phenanthrene-d10	92		50-130
Benzo(a)pyrene-d12	97		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/14/25 22:55
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
cis/trans-Decalin	ND		ng/l	4.95	2.68	1
C1-Decalins	ND		ng/l	4.95	2.68	1
C2-Decalins	ND		ng/l	4.95	2.68	1
C3-Decalins	ND		ng/l	4.95	2.68	1
C4-Decalins	ND		ng/l	4.95	2.68	1
Naphthalene	ND		ng/l	9.90	2.71	1
C1-Naphthalenes	ND		ng/l	9.90	2.71	1
C2-Naphthalenes	ND		ng/l	9.90	2.71	1
C3-Naphthalenes	ND		ng/l	9.90	2.71	1
C4-Naphthalenes	ND		ng/l	9.90	2.71	1
2-Methylnaphthalene	ND		ng/l	9.90	6.56	1
1-Methylnaphthalene	ND		ng/l	9.90	4.29	1
Benzothiophene	ND		ng/l	9.90	2.55	1
C1-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C2-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C3-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
C4-Benzo(b)thiophenes	ND		ng/l	9.90	2.55	1
Biphenyl	ND		ng/l	9.90	2.11	1
2,6-Dimethylnaphthalene	ND		ng/l	9.90	3.02	1
Dibenzofuran	ND		ng/l	9.90	3.71	1
Acenaphthylene	ND		ng/l	9.90	5.18	1
Acenaphthene	ND		ng/l	9.90	3.61	1
2,3,5-Trimethylnaphthalene	ND		ng/l	9.90	1.90	1
Fluorene	ND		ng/l	9.90	4.21	1
C1-Fluorenes	ND		ng/l	9.90	4.21	1
C2-Fluorenes	ND		ng/l	9.90	4.21	1
C3-Fluorenes	ND		ng/l	9.90	4.21	1
Dibenzothiophene	ND		ng/l	9.90	3.31	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
4-Methyldibenzothiophene(4MDT)	ND		ng/l	9.90	3.31	1
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	9.90	3.31	1
1-Methyldibenzothiophene(1MDT)	ND		ng/l	9.90	3.31	1
C1-Dibenzothiophenes BS	ND		ng/l	9.90	3.31	1
C2-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C3-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
C4-Dibenzothiophenes	ND		ng/l	9.90	3.31	1
Phenanthrene	ND		ng/l	9.90	5.91	1
3-Methylphenanthrene (3MP)	ND		ng/l	9.90	5.91	1
2-Methylphenanthrene (2MP)	ND		ng/l	9.90	5.91	1
2-Methylanthracene (2MA)	ND		ng/l	9.90	5.91	1
9/4-Methylphenanthrene (9MP)	ND		ng/l	9.90	5.91	1
1-Methylphenanthrene (1MP)	ND		ng/l	9.90	5.91	1
C1-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C2-Phenanthrenes/Anthr BS	ND		ng/l	9.90	5.91	1
C3-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
C4-Phenanthrenes/Anthracenes	ND		ng/l	9.90	5.91	1
Retene	ND		ng/l	9.90	5.99	1
Anthracene	ND		ng/l	9.90	3.40	1
Carbazole	ND		ng/l	9.90	5.37	1
Fluoranthene	ND		ng/l	9.90	6.62	1
Benzo(b)fluorene	ND		ng/l	9.90	4.60	1
7H-Benzo(c)fluorene	ND		ng/l	9.90	4.60	1
2-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
4-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
1-Methylpyrene[1]	ND		ng/l	9.90	6.99	1
Pyrene	ND		ng/l	9.90	6.99	1
C1-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C2-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C3-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.90	6.99	1
Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C1-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C2-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C3-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
C4-Naphthobenzothiophenes	ND		ng/l	9.90	4.33	1
Benz(a)anthracene	ND		ng/l	9.90	5.97	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - (b) (4)						
Chrysene/Triphenylene	ND		ng/l	9.90	7.02	1
C1-Chrysenes	ND		ng/l	9.90	7.02	1
C2-Chrysenes BS	ND		ng/l	9.90	7.02	1
C3-Chrysenes	ND		ng/l	9.90	7.02	1
C4-Chrysenes	ND		ng/l	9.90	7.02	1
Benzo(b)fluoranthene	ND		ng/l	9.90	7.17	1
Benzo(j)+(k)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(a)fluoranthene	ND		ng/l	9.90	6.40	1
Benzo(e)pyrene	ND		ng/l	9.90	7.07	1
Benzo(a)pyrene	ND		ng/l	9.90	7.53	1
Perylene	ND		ng/l	9.90	4.55	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.90	9.50	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.90	6.42	1
Benzo(g,h,i)perylene	ND		ng/l	9.90	6.53	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	75		50-130
Phenanthrene-d10	84		50-130
Benzo(a)pyrene-d12	86		50-130

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/14/25 15:55
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 02-04 Batch: WG2019660-1					
cis/trans-Decalin	ND		ng/l	5.00	2.71
C1-Decalins	ND		ng/l	5.00	2.71
C2-Decalins	ND		ng/l	5.00	2.71
C3-Decalins	ND		ng/l	5.00	2.71
C4-Decalins	ND		ng/l	5.00	2.71
Naphthalene	ND		ng/l	10.0	2.74
C1-Naphthalenes	ND		ng/l	10.0	2.74
C2-Naphthalenes	ND		ng/l	10.0	2.74
C3-Naphthalenes	ND		ng/l	10.0	2.74
C4-Naphthalenes	ND		ng/l	10.0	2.74
2-Methylnaphthalene	ND		ng/l	10.0	6.63
1-Methylnaphthalene	ND		ng/l	10.0	4.33
Benzothiophene	ND		ng/l	10.0	2.58
C1-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C2-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C3-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
C4-Benzo(b)thiophenes	ND		ng/l	10.0	2.58
Biphenyl	ND		ng/l	10.0	2.13
2,6-Dimethylnaphthalene	ND		ng/l	10.0	3.05
Dibenzofuran	ND		ng/l	10.0	3.75
Acenaphthylene	ND		ng/l	10.0	5.23
Acenaphthene	ND		ng/l	10.0	3.65
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.92
Fluorene	ND		ng/l	10.0	4.25
C1-Fluorenes	ND		ng/l	10.0	4.25
C2-Fluorenes	ND		ng/l	10.0	4.25
C3-Fluorenes	ND		ng/l	10.0	4.25
Dibenzothiophene	ND		ng/l	10.0	3.34
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	3.34

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2501741
Report Date: 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/14/25 15:55
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 02-04 Batch: WG2019660-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	3.34
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	3.34
C1-Dibenzothiophenes BS	ND		ng/l	10.0	3.34
C2-Dibenzothiophenes	ND		ng/l	10.0	3.34
C3-Dibenzothiophenes	ND		ng/l	10.0	3.34
C4-Dibenzothiophenes	ND		ng/l	10.0	3.34
Phenanthrene	ND		ng/l	10.0	5.97
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	5.97
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	5.97
2-Methylanthracene (2MA)	ND		ng/l	10.0	5.97
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	5.97
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	5.97
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	5.97
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	5.97
Retene	ND		ng/l	10.0	6.05
Anthracene	ND		ng/l	10.0	3.44
Carbazole	ND		ng/l	10.0	5.42
Fluoranthene	ND		ng/l	10.0	6.69
Benzo(b)fluorene	ND		ng/l	10.0	4.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	4.65
2-Methylpyrene[1]	ND		ng/l	10.0	7.06
4-Methylpyrene[1]	ND		ng/l	10.0	7.06
1-Methylpyrene[1]	ND		ng/l	10.0	7.06
Pyrene	ND		ng/l	10.0	7.06
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2501741
Report Date: 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/14/25 15:55
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - (b) (4) for sample(s): 02-04 Batch: WG2019660-1					
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	7.06
Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C1-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C2-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C3-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
C4-Naphthobenzothiophenes	ND		ng/l	10.0	4.37
Benz(a)anthracene	ND		ng/l	10.0	6.03
Chrysene/Triphenylene	ND		ng/l	10.0	7.09
C1-Chrysenes	ND		ng/l	10.0	7.09
C2-Chrysenes BS	ND		ng/l	10.0	7.09
C3-Chrysenes	ND		ng/l	10.0	7.09
C4-Chrysenes	ND		ng/l	10.0	7.09
Benzo(b)fluoranthene	ND		ng/l	10.0	7.24
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	6.46
Benzo(a)fluoranthene	ND		ng/l	10.0	6.46
Benzo(e)pyrene	ND		ng/l	10.0	7.14
Benzo(a)pyrene	ND		ng/l	10.0	7.61
Perylene	ND		ng/l	10.0	4.60
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	9.60
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	6.49
Benzo(g,h,i)perylene	ND		ng/l	10.0	6.60

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	72		50-130
Phenanthrene-d10	83		50-130
Benzo(a)pyrene-d12	83		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 02-04 Batch: WG2019660-2 WG2019660-3								
Naphthalene	98		95		50-130	3		30
2-Methylnaphthalene	92		89		50-130	3		30
Acenaphthylene	93		90		50-130	3		30
Acenaphthene	95		92		50-130	3		30
Fluorene	105		101		50-130	4		30
Phenanthrene	106		101		50-130	5		30
Anthracene	115		111		50-130	4		30
Fluoranthene	102		99		50-130	3		30
Pyrene	110		106		50-130	4		30
Benz(a)anthracene	103		99		50-130	4		30
Chrysene/Triphenylene	100		96		50-130	4		30
Benzo(b)fluoranthene	102		96		50-130	6		30
Benzo(j)+(k)fluoranthene	106		102		50-130	4		30
Benzo(a)pyrene	107		102		50-130	5		30
Indeno(1,2,3-cd)pyrene	94		94		50-130	0		30
Dibenz(a,h)+(a,c)anthracene	102		97		50-130	5		30
Benzo(g,h,i)perylene	94		90		50-130	4		30

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - (b) (4) Associated sample(s): 02-04 Batch: WG2019660-2 WG2019660-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	84		81		50-130
Phenanthrene-d10	108		103		50-130
Benzo(a)pyrene-d12	113		109		50-130

(b) (4)

PETROLEUM HYDROCARBONS

(b) (4)

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/15/25 00:28
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0004	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0004	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0002	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-02
Client ID: A3-TW-0016098-24092-N-R1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 08:49
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.032	0.027	1
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	76		50-130
d50-Tetracosane	72		50-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/15/25 01:55
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0005	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0005	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	0.001	JC	mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	0.0004	J	mg/l	0.0010	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-03
Client ID: A3-TW-0016098-24092-N-1
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:08
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.027	1
Total Saturated Hydrocarbons	0.001	J	mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	82		50-130
d50-Tetracosane	79		50-130

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 01/15/25 03:23
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Nonane (C9)	ND		mg/l	0.001	0.0005	1
n-Decane (C10)	ND		mg/l	0.001	0.0005	1
n-Undecane (C11)	ND		mg/l	0.001	0.0005	1
n-Dodecane (C12)	ND		mg/l	0.001	0.001	1
n-Tridecane (C13)	ND		mg/l	0.005	0.0005	1
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004	1
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004	1
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004	1
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004	1
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003	1
Norpristane (1650)	ND		mg/l	0.001	0.0002	1
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003	1
Pristane	ND		mg/l	0.001	0.0002	1
n-Octadecane (C18)	ND		mg/l	0.001	0.001	1
Phytane	ND		mg/l	0.001	0.0002	1
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002	1
n-Eicosane (C20)	ND		mg/l	0.001	0.0002	1
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002	1
n-Docosane (C22)	ND		mg/l	0.001	0.0002	1
n-Tricosane (C23)	ND		mg/l	0.001	0.0002	1
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003	1
n-Pentacosane (C25)	ND		mg/l	0.005	0.001	1
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003	1
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004	1
n-Octacosane (C28)	ND		mg/l	0.001	0.001	1
n-Nonacosane (C29)	ND		mg/l	0.001	0.001	1
n-Triacontane (C30)	ND		mg/l	0.001	0.0002	1
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004	1

(b) (4)

Project Name: EDWM Appendix C. Tier 1 Analysis Tech Memos **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

SAMPLE RESULTS

Lab ID: L2501741-04
Client ID: A3-TW-0016098-24092-N-2
Sample Location: HONOLULU, HI

Date Collected: 01/10/25 09:34
Date Received: 01/11/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - (b) (4)						
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002	1
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002	1
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002	1
n-Pentatriacontane (C35)	0.001	J	mg/l	0.001	0.0002	1
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002	1
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002	1
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004	1
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002	1
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.027	1
Total Saturated Hydrocarbons	0.001	J	mg/l	0.001	0.0002	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	76		50-130
d50-Tetracosane	71		50-130

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2501741
Report Date: 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/14/25 18:36
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 02-04 Batch: WG2019660-1					
n-Nonane (C9)	ND		mg/l	0.001	0.0005
n-Decane (C10)	ND		mg/l	0.001	0.001
n-Undecane (C11)	ND		mg/l	0.001	0.0005
n-Dodecane (C12)	ND		mg/l	0.001	0.001
n-Tridecane (C13)	ND		mg/l	0.005	0.0005
2,6,10-Trimethyldodecane (1380)	ND		mg/l	0.001	0.0004
n-Tetradecane (C14)	ND		mg/l	0.001	0.0004
2,6,10-Trimethyltridecane (1470)	ND		mg/l	0.001	0.0004
n-Pentadecane (C15)	ND		mg/l	0.001	0.0004
n-Hexadecane (C16)	ND		mg/l	0.001	0.0003
Norpristane (1650)	ND		mg/l	0.001	0.0002
n-Heptadecane (C17)	ND		mg/l	0.001	0.0003
Pristane	ND		mg/l	0.001	0.0002
n-Octadecane (C18)	ND		mg/l	0.001	0.001
Phytane	ND		mg/l	0.001	0.0002
n-Nonadecane (C19)	ND		mg/l	0.001	0.0002
n-Eicosane (C20)	ND		mg/l	0.001	0.0002
n-Heneicosane (C21)	ND		mg/l	0.001	0.0002
n-Docosane (C22)	ND		mg/l	0.001	0.0002
n-Tricosane (C23)	ND		mg/l	0.001	0.0002
n-Tetracosane (C24)	ND		mg/l	0.001	0.0003
n-Pentacosane (C25)	ND		mg/l	0.005	0.001
n-Hexacosane (C26)	ND		mg/l	0.001	0.0003
n-Heptacosane (C27)	ND		mg/l	0.001	0.0004
n-Octacosane (C28)	ND		mg/l	0.001	0.001
n-Nonacosane (C29)	ND		mg/l	0.001	0.001
n-Triacontane (C30)	ND		mg/l	0.001	0.0002
n-Hentriacontane (C31)	ND		mg/l	0.001	0.0004
n-Dotriacontane (C32)	ND		mg/l	0.001	0.0002

(b) (4)

Project Name: EDWM
Project Number: 60729369
Lab Number: L2501741
Report Date: 01/20/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/14/25 18:36
Analyst: (b) (6)

Extraction Method: EPA 3510C
Extraction Date: 01/14/25 10:58

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - (b) (4) for sample(s): 02-04 Batch: WG2019660-1					
n-Tritriacontane (C33)	ND		mg/l	0.001	0.0002
n-Tetratriacontane (C34)	ND		mg/l	0.001	0.0002
n-Pentatriacontane (C35)	ND		mg/l	0.001	0.0002
n-Hexatriacontane (C36)	ND		mg/l	0.001	0.0002
n-Heptatriacontane (C37)	ND		mg/l	0.001	0.0002
n-Octatriacontane (C38)	ND		mg/l	0.001	0.0004
n-Nonatriacontane (C39)	ND		mg/l	0.001	0.0002
n-Tetracontane (C40)	ND		mg/l	0.001	0.0002
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/l	0.033	0.028
Total Saturated Hydrocarbons	ND		mg/l	0.001	0.0002

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	71		50-130
d50-Tetracosane	66		50-130

(b) (4)

Lab Control Sample Analysis
Batch Quality Control

Project Name: EDWM
Project Number: 60729369

Lab Number: L2501741
Report Date: 01/20/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - [redacted] Associated sample(s): 02-04 Batch: WG2019660-2 WG2019660-3								
Nonane (C9)	66		65		50-130	2		30
n-Decane (C10)	76		74		50-130	3		30
n-Dodecane (C12)	84		82		50-130	2		30
n-Tetradecane (C14)	88		86		50-130	2		30
n-Hexadecane (C16)	93		91		50-130	2		30
n-Octadecane (C18)	98		95		50-130	3		30
n-Nonadecane (C19)	95		92		50-130	3		30
n-Eicosane (C20)	97		94		50-130	3		30
n-Docosane (C22)	94		91		50-130	3		30
n-Tetracosane (C24)	100		98		50-130	2		30
n-Hexacosane (C26)	95		94		50-130	1		30
n-Octacosane (C28)	95		93		50-130	2		30
n-Triacontane (C30)	96		94		50-130	2		30
n-Hexatriacontane (C36)	84		84		50-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	96		92		50-130
d50-Tetracosane	94		90		50-130

[redacted]

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2501741-01A	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-01B	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-02A	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-02B	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-02C	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-02D	Amber 1L Na2S2O3	A	7	7	4.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2501741-02E	Amber 1L Na2S2O3	A	7	7	4.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2501741-03A	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-03B	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-03C	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-03D	Amber 1L Na2S2O3	A	7	7	4.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2501741-03E	Amber 1L Na2S2O3	A	7	7	4.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2501741-04A	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-04B	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-04C	Vial Ascorbic Acid/HCl preserved	A	NA		4.8	Y	Present/Intact		A2-PIANO8260(14)
L2501741-04D	Amber 1L Na2S2O3	A	7	7	4.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)
L2501741-04E	Amber 1L Na2S2O3	A	7	7	4.8	Y	Present/Intact		A2-SHC(7),A2-ALKPAH(7)

*Values in parentheses indicate holding time in days

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2501741
Project Number:	60729369	**Report Date:**	01/20/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name:	EDWM	**Lab Number:**	L2501741
Project Number:	60729369	**Report Date:**	01/20/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

(b) (4)

Project Name: EDWM **Lab Number:** L2501741

Project Number: 60729369 **Report Date:** 01/20/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

(b) (4) performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of (b) (4) shall be to re-perform the work at it's own expense. In no event shall (b) (4) be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by (b) (4).

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

(b) (4)

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

(b) (4)
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

(b) (4)
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

(b) (4)
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

(b) (4)
Alpha SOP 23528

The following analytes are included in our Massachusetts DEP Scope of Accreditation

(b) (4)

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

(b) (4)

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

1/11/25 L2501741

Event: EDWM A3 Zone Residential Sampling

(b) (4)

CHAIN OF CUSTODY PAGE 1 OF 1

ALP-23

Project Information

Project Name: EDWM

Project Location: Honolulu, Hawaii

Project # 60729369

Project Manager (b) (6)

(b) (4) Quote #:

Date Rec'd in Lab: (b) (4) Job #:

Report Information | Data Deliverables | Billing Information

☐ EMMAX ☐ Add'l Deliverables ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: (b) (6)

Address: AECOM-1001 Bishop Street #1600

Honolulu, HI 96813

Phone (b) (6)

Fax:

Email: (b) (6)

☐ These samples have been Previously analyzed by (b) (4)

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Samples to be uploaded into EDMS database:

☐ MS/MSD (at unit cost) will be omitted unless you check here

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☑ Lab to do

Preservation
☐ Lab to do
(Please specify below)

(b) (4) Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260D PIANO VOCs	8270 SIM Parent & Alkylated PAHs	8015D Sat Hydrocarbons	Sample Specific Comments	TOTAL # BOTTLES
-01	A3-TB-250110-24092-N	1/10/25	0825	DW	(b) (6)	2	0	0		2
-02	A3-TW-0016098-24092-N-R1	1/10/25	0849	DW		3	1	1		5
-03	A3-TW-0016098-24092-N-1	1/10/25	0908	DW		3	1	1		5
-04	A3-TW-0016098-24092-N-2	1/10/25	0934	DW		3	1	1		5
	~~A3-TW-0016098-24092-N-3~~	~~1/10/25~~		~~DW~~		~~3~~	~~1~~	~~1~~ (25)	01.10.25	5
	~~A3-TW-0016098-24092-N-4~~	~~1/10/25~~		~~DW~~		~~3~~	~~1~~	~~1~~ (25)	01.10.25	5
	~~A3-TW-0016098-24092-N-5~~	~~1/10/25~~		~~DW~~		~~3~~	~~1~~	~~1~~ (25)	01.10.25	5
						Container Type	V	A	A	
						Preservative	B,I	H	H	

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alaska's Payment Terms.

Relinquished By:	Date/Time	Relinquished By:	Date/Time
(b) (6)	01.10.25 1128	(b) (6)	428
	1/10/25 1230		

R 1/11/25 11:38 21

AECOM BOS

Carrier	Origin	Air waybill number	Date of departure	Final dest.
016	HNL	016-85109220	1/10/25	BOS

UNITED CARGO QuickPak

For domestic service
1-800-UA-CARGO

Routing	ETD	1st flight #/city	2nd flight #/city	3rd flight #/city	ETA
		362 / ENB	1109 / BOS		

From

Shipper's name: AECOM
Shipper's reference #: 60729369.00.30.01
Company name: AECOM
Telephone: (b) (6)
Street address: 1001 BISHOP ST STE 1600
City: HONOLULU
State: HI
Zip: 96813

To

(b) (4)

No. of pieces	Weight/lbs	Description	Declared value
	1-25	WATER SAMPLES	
	26-50		
	51-75		
	76-100		
1	Total	Handling information/LifeGuard	

Third party billing
Name: Account #:
(b) (6)

Form of payment
Credit card Type: Exp. date:
Comat GBL: ✓ Bill customer acct. no.
72300750012
Received in good order and condition
Consignee signature:
Date: Time:

Weight charge:
Valuation charge:
Fuel:
Freight processing fee MC:
Taxes:
Other:
Total:

✓ This shipment does not contain dangerous goods
This shipment does contain dangerous goods

Origin station code/location by: HNL / F Date: Time:
Destination station code/location by: Agent (full name): Date: Time:

LGDAE220P-NONUMBER (Rev 01/20)
Part 1: Shipper, Part 2: Delivery, Part 3: Consignee, Part 4: Destination Agent, Part 5: Carrier/Port of Origin

016 85109220

Tracking ID: AT22JT3M7P
Order #2526228
Order references:
Airway Bill: 016-85109220, Flight Number: UA362 UA1109, Charge Code: 60729369.00.30.01, Non-PO Invoice: True, AECOM Account Manager: (b) (6)
(b) (6)

AECOM

QR CODE:
ATN4AH9RG3
Piece 1 of 1

SHIP FROM:
United Air Cargo
122 Harborside Drive
Main Cargo Facility
Boston, MA 02128
United States of America

Dimensions: 25.0x14.0x14.0 IN, 50.0 LBS
Commodity: Other - water sample
Pickup Instructions: Call 808 2584213 if there are any issues with pick up.

SHIP TO:
(b) (4)

Delivery Instructions: Call 808 2584213 if there are any issues with pick up.
QDT: Jan 11, 2025 14:33 EST
For questions or information about this shipment, please call 855-524-7772

Appendix C. Tier 1 Analysis Tech Memos

Appendix D. Third Quarter (October – December 2024) of EDWM MS Results

Sample ID	Sample Date	Matrix Spike Concentration (ppb)	Laboratory Result (ppb)	Percent Recovery (%)
OP26474-MS	10/2/2024	72.7	75.5	104%
OP26475-MS	10/2/2024	72.7	72.9	100%
OP26478-MS	10/3/2024	72.7	73.7	101%
OP26477-MS	10/3/2024	72.7	71.2	98%
OP26491-MS	10/4/2024	69.9	89.1	127%
OP26492-MS	10/4/2024	70.1	72.5	103%
OP26499-MS	10/8/2024	69.4	81.2	117%
OP26508-MS	10/9/2024	69	74	107%
OP26509-MS	10/9/2024	70.7	69.7	99%
OP26513-MS	10/10/2024	69.7	68.4	98%
OP26520-MS	10/11/2024	68.7	72.5	106%
OP26536-MS	10/15/2024	68.4	67.9	99%
OP26550-MS	10/17/2024	68.8	67.3	98%
OP26551-MS	10/17/2024	69.8	71	102%
OP26557-MS	10/18/2024	69.3	85.6	124%
OP26558-MS	10/18/2024	69.7	82.5	118%
OP26584-MS	10/22/2024	69.9	84.1	120%
OP26587-MS	10/24/2024	69.7	77	110%
OP26599-MS	10/25/2024	69.8	86.2	123%
OP26600-MS	10/25/2024	69.9	87.2	125%
OP26619-MS	10/29/2024	70.1	93.5	133%
OP26618-MS	10/29/2024	69.6	73.3	105%
OP26629-MS	10/30/2024	70.4	82.4	117%
OP26660-MS	11/5/2024	70.8	100	141%
OP26661-MS	11/5/2024	69.9	98.5	141%
OP26671-MS	11/6/2024	68.6	47	0%
OP26670-MS	11/6/2024	70.3	48	0%
OP26675-MS	11/7/2024	69	85.6	124%
OP26682-MS	11/8/2024	70.1	109	155%
OP26695-MS	11/12/2024	69.7	103	148%
OP26696-MS	11/12/2024	70.1	96.8	138%
OP26704-MS	11/13/2024	69.8	98.3	141%
OP26705-MS	11/13/2024	70.3	97.7	139%
OP26714-MS	11/14/2024	69.7	90.1	129%
OP26715-MS	11/14/2024	69.8	91.3	131%
OP26723-MS	11/15/2024	69.3	95.7	138%
OP26722-MS	11/15/2024	69.9	108	155%
OP26734-MS	11/19/2024	70.2	64.9	92%
OP26741-MS	11/20/2024	69.1	58.4	85%
OP26757-MS	11/22/2024	71	429	122%[1]
OP26756-MS	11/22/2024	72	404	115%[1]
OP26770-MS	11/26/2024	69.4	49.7	72%
OP26773-MS	11/27/2024	69	67.1	97%
OP26797-MS	12/3/2024	69.6	58.8	84%
OP26798-MS	12/3/2024	70.1	89	127%
OP26806-MS	12/4/2024	70.5	74.5	106%
OP26805-MS	12/4/2024	69.6	52.5	75%
OP26813-MS	12/5/2024	69.1	66.5	96%
OP26820-MS	12/6/2024	69.4	70.1	101%
OP26830-MS	12/10/2024	70.7	65.9	93%
OP26839-MS	12/11/2024	69.7	49	70%
OP26844-MS	12/12/2024	68.4	71	104%
OP26854-MS	12/13/2024	70.5	85.6	121%
OP26877-MS	12/17/2024	68.5	88.8	130%
OP26878-MS	12/18/2024	70.4	94.7	135%
OP26879-MS	12/18/2024	68.5	68.3	100%
OP26898-MS	12/20/2024	69.3	67.1	97%
OP26897-MS	12/20/2024	69.6	71.6	103%
OP26903-MS	12/23/2024	69.9	86.9	124%
OP26904-MS	12/23/2024	69	99.7	144%
OP26910-MS	12/24/2024	70.8	73.5	104%
OP26909-MS	12/24/2024	69.3	128	185%
OP26923-MS	12/27/2024	68.6	64.6	94%
OP26924-MS	12/27/2024	70.7	64.2	91%
OP26929-MS	12/30/2024	69.7	63.9	92%
OP26930-MS	12/30/2024	69.2	92	133%
OP26937-MS	12/31/2024	71.2	67	94%
OP26938-MS	12/31/2024	69.7	69.6	100%

Notes

Due to variations in the laboratory acceptable percent recovery between MS samples for this evaluation the limits of 70 -130% are used.

Exceeds the QSM Limits (DRO) of 36 -- 132%.

Not Spiked

ND: Non-Detect

[1]Percent recovery was manually calculated by the lab due to analytical spiking error of 5x.

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	1-21589
Call Date/Time	10/1/2024 6:06:11 AM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	10/1/2024 9:00:00 AM

Call Center Information

Caller/Resident Information

Name	
Address	6522 103rd Street
Command	
Branch	
Property Manager	
Date of move-in	8/1/2024 12:00:00 AM
Number of adults under 65	4
Number of adults 65 and older	0
Number of school age children under 18	0
Number of infants under the age of 2	0
Number and type of pets	1 dog
Call Center Complaint Summary / Initial Notes	The resident requested a WQI to determine water quality after developing a rash after bathing. The resident is seeking medical attention for their symptoms.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	No
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	
Do you see any issues with the appearance or odor the water in your home?	No
Color or Appearance of Water	
Floating Particles	None
Taste	None
Odor	None
Staining	None
Scaling (visible surface buildup)	

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?	Yes
Skin	Adults
	rash after bathing
Respiratory	None
Gastrointestinal	None
Headache	None
Dizziness	None
Cough	None
Vision	None
Other	None

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?	Bathroom
Are your neighbors experiencing the same issue?	
Does it occur with just the cold water, the hot water, or both?	
Does it occur only when you first turn on the water or does it occur continuously?	
Are you aware of any recent nearby construction or maintenance activities?	

Premise Plumbing History

Premise Plumbing History

Water Quality Concerns

Cold water Sampling Location	Other
pH (standard units)	7.14
Conductivity (µS/cm)	254.98
FreeChlorine (mg/L or ppm)	0.49
Cold Temp (degrees F)	78.46
Hot water Sampling Location	Other
pH (standard units)	7.34
Conductivity (µS/cm)	270.36
FreeChlorine (mg/L or ppm)	0.35
Hot Temp (degrees F)	112.01
Water Quality Notes	Unit was not previously sampled. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. No unusual observations TURB: 0.07 NTU (cold), 0.67 NTU (hot)

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	No
Do you have point-of-use filters?	
Kitchen sink	
Refrigerator	
Bathroom - first floor	
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	

Water Fixtures

Staining or Scale visible buildup on water fixtures	
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Looks new / clean
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	
Bathroom - other - Condition of aerator	

Other Concerns

Water Presure
Hot Water Temperature
Cross-Connection
Irrigation

Call Center - WQI Checklist

Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	Yes
	Follow up with EDWM water quality results when available. In addition to their allergist, the resident was recommended to contact Red Hill Clinic if issues continue. Resident was also informed to consider visiting a dermatologist to determine the extent of the dermatological issues. It is recommended that the temperature of the water heater be reduced. No additional actions recommended.
Other Site Visit Notes	Kitchen sink aerator: No debris was observed. The aerator is in good condition. Hallway bathroom aerator: No debris was observed. The aerator is in good condition. 40-gallon gas water heater manufactured by Bradford White Corp. on 23 September 2005. Visual observation showed the water heater to be in good condition with no signs of external corrosion. Thermostat dial was set to approximately 130°F – 135 °F. See Section E. No visible maintenance records found on the water heater. The pipe material is copper.

Call Center - WQI Checklist

Photos

Ticket Number	21589
Location	Other
Title	Interior view of Kitchen Sink Aerator

Call Center - WQI Checklist

Photos

Ticket Number	21589
Location	First Floor - Bathroom - Sink
Title	Interior view of Hallway Bathroom Aerator

Tuesday 01 October 2024, 0900

Zone – A3, 6522 103rd St
Location Code: A3-103S6522

BLUF

The resident requested a WQI to determine water quality after developing a rash after bathing. The resident is seeking medical attention for their symptoms. The residence's water heater was observed at approximately 130°F - 135°F; this high range increases the risk of scalding. Additional skin irritants were not identified. All water quality parameters collected were within expected ranges. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Based on the observations made during the WQI inspection, no immediate concerns regarding water quality were identified.

A. Resident Demographic / Concerns

- Household consists of four (4) adults and one (1) dog.
- Resident since approximately August 2024.
- Resident reported skin irritation after bathing approximately one week ago. Resident reported this effect to come from hot water.

B. Water Quality Observations and Results

- Unit was not previously sampled.
- No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water.
- No unusual observations.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the kitchen sink and hallway bathroom sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold samples from the hallway bathroom sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the hallway bathroom sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.14 (cold)
    - 7.34 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 254.98 µS/cm (cold)
    - 270.36 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.07 NTU (cold)
    - 0.67 NTU (hot)

- Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
  - 0.49 mg/L (cold)
  - 0.35 mg/L (hot)

- Temperature
  - 78.46 °F (cold)
  - 112.01 °F (hot)

- WQI hot water temperature results collected.
  - Kitchen sink – 125.7 °F

- Figure 1. Interior view of kitchen sink aerator. No debris was observed. The aerator is in good condition.

- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

C. Hot Water Heater
- 40-gallon gas water heater manufactured by Bradford White Corp. on 23 September 2005.
- Visual observation showed the water heater to be in good condition with no signs of external corrosion.
- Thermostat dial was set to approximately 130°F – 135 °F. See Section E.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment
No filters installed.

E. Overall Assessment
- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures except the hallway bathroom sink could reach a temperature of 115°F or above. Master bathroom was not available for the inspection.
- Resident reported that the water temperature may be too high for their sensitive skin, which is evident by the thermostat setting. Resident was unclear if their health concerns resulted from potential scalding or from other factors as they've only noticed this effect from hot water. As a result, resident is currently seeking medical attention (allergist) to address these issues.
- Maintenance should reduce thermostat dial to 115 °F – 120 °F.
- No unusual observations were made from the hot or cold water; water was clear.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations
- Follow up with EDWM water quality results when available.
- In addition to their allergist, the resident was recommended to contact Red Hill Clinic if issues continue. Resident was also informed to consider visiting a dermatologist to determine extent of dermatological issues.
- It is recommended that the temperature of the water heater be reduced.
- No additional actions recommended.

Conclusion

The inspection was conducted at the request of the resident to determine water quality. The resident reported concern that the water could be the cause of their skin irritation. It was found that the resident's water heater thermostat dial was set above recommended temperature ranges and could be a potential source of irritation. The resident has sought medical attention for their concern. It is recommended that the temperature of the water heater be reduced. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action is required regarding this WQI event. Pending EDWM analytical results

will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Summary of Chemistry Results
Zone A3
Drinking Water Sampling, Joint Base Pearl Harbor - Hickam, Oahu, Hawaii

Notes:
ND = Not Detected
ISP = Incident Specific Parameter
EAL = DOH Environmental Action Level
EPA MCL = EPA Maximum Contaminant Level
All Results shown in Parts per Billion (ppb), with the exception of Field and Bacterial Test results
Parts per Million (ppm)
Parts per Thousand (ppth)
§ - Exceeds Screening Level
-- = No Information Available
N (Normal) = Full compliance sample
FD (Field Duplicate) = Extra sample taken for quality control
N (Grab, Resample) = Additional follow-up sample
MPN/mL = Most probable number per milliliter

			Location ID:	A3-103S6522	
			Location Type:	Residence	
			Address:	6522 103rd Street	
			Field Sample ID:	A3-TW-0016384-24092-N-WQI	A3-TW-0016384-24092-N-H-WQI
			Sample Date:	2024-10-01	2024-10-01
			Sample Type:	N (Normal)	N (Normal)
Method Group	**Analyte**	**DOH Project Screening Level**	**Basis of Project Screening Level**		
Bacterial Test (in 100 mL)	Coliform	--	--	Absent	--
	E. coli	--	--	Absent	--
Bacterial Test (MPN/mL)	Heterotrophic Plate Count	--	--	214	24.0
Field Test (ppb)	Free Chlorine	4000	MCL	490	350
Field Test (pH)	pH	--	--	7.15	7.34
Field Test (ms/cm)	Specific Conductivity	--	--	0.250	0.270
Field Test (degrees Celcuis)	Temperature	--	--	25.8	44.5
Field Test (nephelometric turbidity unit)	Turbidity	5	MCL	0.0730	0.670
General Chemistry (ppb)	Alkalinity, Total (as CaCO3)	--	--	57200	--
	Total Organic Carbon	--	--	ND	--
Hydrocarbons (ppb)	Petroleum Hydrocarbons (as Diesel)	--	--	ND	--
	Petroleum Hydrocarbons (as Gasoline)	--	--	ND	--
	Petroleum Hydrocarbons (as Oil)	--	--	ND	--
	Petroleum Hydrocarbons, Total	--	--	ND	--
Metals (ppb)	Copper	1300	MCL	10.3	--
	Lead	15	MCL	0.190	--
	Mercury	2	MCL	ND	--
Synthetic Organic Compounds (ppb)	1-Methylnaphthalene	--	--	ND	--
	2-Methylnaphthalene	--	--	ND	--
	Acenaphthylene	--	--	ND	--
	Anthracene	--	--	ND	--
	Benzo(a)pyrene	0.2	MCL	ND	--
	Benzo(b)fluoranthene	--	--	ND	--

Summary of Chemistry Results
Zone A3
Drinking Water Sampling, Joint Base Pearl Harbor - Hickam, Oahu, Hawaii

Notes:
ND = Not Detected
ISP = Incident Specific Parameter
EAL = DOH Environmental Action Level
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All Results shown in Parts per Billion (ppb), with the exception of Field and Bacterial Test results
Parts per Million (ppm)
Parts per Thousand (ppth)
§ - Exceeds Screening Level
-- = No Information Available
N (Normal) = Full compliance sample
FD (Field Duplicate) = Extra sample taken for quality control
N (Grab, Resample) = Additional follow-up sample
MPN/mL = Most probable number per milliliter

			Location ID:	A3-103S6522	
			Location Type:	Residence	
			Address:	6522 103rd Street	
			Field Sample ID:	A3-TW-0016384-24092-N-WQI	A3-TW-0016384-24092-N-H-WQI
			Sample Date:	2024-10-01	2024-10-01
			Sample Type:	N (Normal)	N (Normal)
Method Group	**Analyte**	**DOH Project Screening Level**	**Basis of Project Screening Level**		
Synthetic Organic Compounds (ppb)	Benzo(g,h,i)perylene	--	--	ND	--
	Benzo(k)fluoranthene	--	--	ND	--
	Chrysene	--	--	ND	--
	Dibenz(a,h)anthracene	--	--	ND	--
	Fluorene	--	--	ND	--
	Indeno(1,2,3-c,d)pyrene	--	--	ND	--
	Naphthalene	--	--	ND	--
	Phenanthrene	--	--	ND	--
	Pyrene	--	--	ND	--
Volatile Organic Compounds (ppb)	1,2,4-Trimethylbenzene	--	--	ND	--
	1,3,5-Trimethylbenzene	--	--	ND	--
	Benzene	5	MCL	ND	--
	Cumene	--	--	ND	--
	Ethylbenzene	700	MCL	ND	--
	m,p-Xylene	--	--	ND	--
	n-Butylbenzene	--	--	ND	--
	n-Propylbenzene	--	--	ND	--
	o-Xylene	--	--	ND	--
	sec-Butylbenzene	--	--	ND	--
	tert-Butylbenzene	--	--	ND	--
	Toluene	1000	MCL	ND	--
	Xylenes, Total	10000	MCL	ND	--
Trihalomethanes (ppb)	Bromodichloromethane	--	--	ND	--

Summary of Chemistry Results
Zone A3
Drinking Water Sampling, Joint Base Pearl Harbor - Hickam, Oahu, Hawaii

Notes:
ND = Not Detected
ISP = Incident Specific Parameter
EAL = DOH Environmental Action Level
EPA MCL = EPA Maximum Contaminant Level
All Results shown in Parts per Billion (ppb), with the exception of Field and Bacterial Test results
Parts per Million (ppm)
Parts per Thousand (ppth)
§ - Exceeds Screening Level
-- = No Information Available
N (Normal) = Full compliance sample
FD (Field Duplicate) = Extra sample taken for quality control
N (Grab, Resample) = Additional follow-up sample
MPN/mL = Most probable number per milliliter

			Location ID:	A3-103S6522	
			Location Type:	Residence	
			Address:	6522 103rd Street	
			Field Sample ID:	A3-TW-0016384-24092-N-WQI	A3-TW-0016384-24092-N-H-WQI
			Sample Date:	2024-10-01	2024-10-01
			Sample Type:	N (Normal)	N (Normal)
Method Group	**Analyte**	**DOH Project Screening Level**	**Basis of Project Screening Level**		
Trihalomethanes (ppb)	Bromoform	--	--	ND	--
	Chloroform	--	--	ND	--
	Dibromochloromethane	--	--	ND	--
	Total Trihalomethanes	80	MCL	ND	--

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	1-21706
Call Date/Time	10/3/2024 2:37:28 PM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	10/4/2024 8:00:00 AM

Call Center Information

Caller/Resident Information

Name	
Address	1703 Tinker Avenue
Command	
Branch	
Property Manager	
Date of move-in	9/30/2024 12:00:00 AM
Number of adults under 65	2
Number of adults 65 and older	0
Number of school age children under 18	0
Number of infants under the age of 2	0
Number and type of pets	1 dog
Call Center Complaint Summary / Initial Notes	The resident requested a WQI to determine water quality upon recently moving in. The resident looked up their past drinking water results and was concerned by the 0.032 µg/L Benzo(a)pyrene level, this result is below project screening level of 0.2 µg/L. The resident had no other water quality concerns.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	No
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	
Do you see any issues with the appearance or odor the water in your home?	
Color or Appearance of Water	None
Floating Particles	None
Taste	None
Odor	None
Staining	None
Scaling (visible surface buildup)	No

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?	No
Skin	
Respiratory	None
Gastrointestinal	None
Headache	None
Dizziness	None
Cough	None
Vision	None
Other	None

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?	None
Are your neighbors experiencing the same issue?	
Does it occur with just the cold water, the hot water, or both?	
Does it occur only when you first turn on the water or does it occur continuously?	
Are you aware of any recent nearby construction or maintenance activities?	

Premise Plumbing History

Premise Plumbing History	

Water Quality Concerns

Cold water Sampling Location	Kitchen
pH (standard units)	7.12
Conductivity (µS/cm)	246.77
FreeChlorine (mg/L or ppm)	0.65
Cold Temp (degrees F)	78.09
Hot water Sampling Location	Kitchen
pH (standard units)	7.15
Conductivity (µS/cm)	261.44
FreeChlorine (mg/L or ppm)	0.16
Hot Temp (degrees F)	108.71
Water Quality Notes	Unit was previously sampled on 10 July 2024. Total Alkalinity, Benao(a)pyrene, and Copper were detected. All detections were below project screening levels. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. No unusual observations.

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	No
Do you have point-of-use filters?	
	No filters installed at the moment, but the resident has purchased a Clearly Filtered Water filter to install on the kitchen sink. This filer is NSF/ANSI rated.
Kitchen sink	
Refrigerator	
Bathroom - first floor	
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	

Water Fixtures

Staining or Scale visible buildup on water fixtures	False
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Scaling / Debris / Particulates present
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Scaling / Debris / Particulates present
Bathroom - second floor - Specific inspection point	Sink faucet
Bathroom - second floor - Condition of aerator	Scaling / Debris / Particulates present
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	
Bathroom - other - Condition of aerator	

Other Concerns

Water Presure
Hot Water Temperature
Cross-Connection
Irrigation

Call Center - WQI Checklist

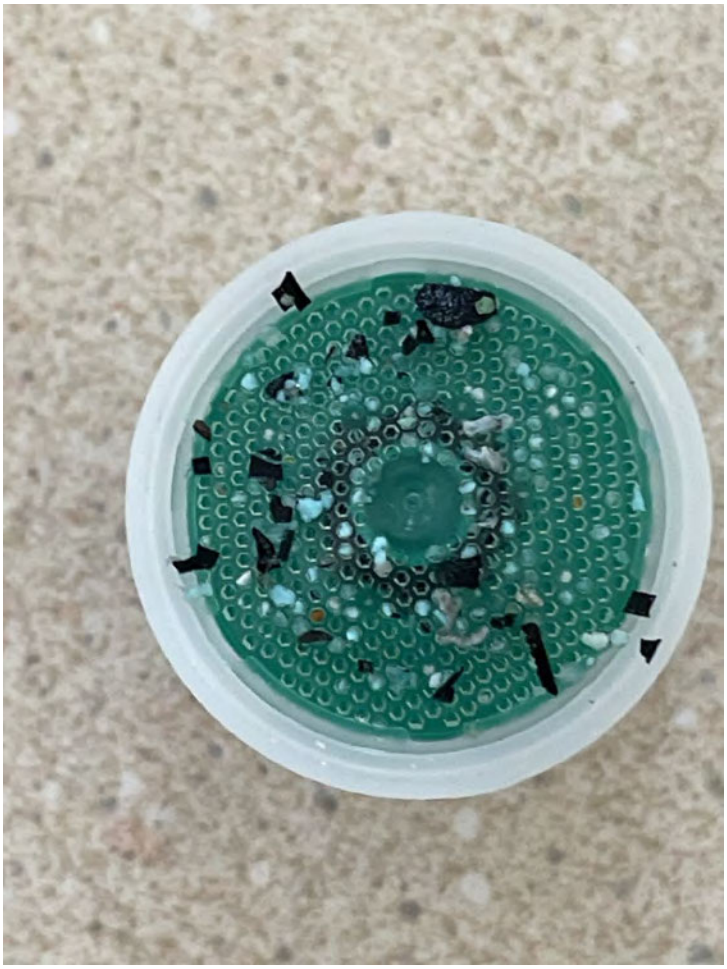
Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	No
	Follow up with EDWM water quality results when available. It is recommended that the water heater is replaced due to age, leaks, and corrosion. No additional actions recommended.
Other Site Visit Notes	Kitchen sink aerator. Many blue and black debris less than 2mm in size were observed, the blue debris is suspected to be corroded copper material from the water heater. Aerator was cleaned after inspection and debris were removed. The aerator is in good condition. Hallway bathroom sink aerator: Debris was observed as described in Figure 1. The aerator is in good condition. Master bathroom sink aerator: Debris was observed as described in Figure 1. The aerator is in good condition. 119-gallon electric water heater manufactured by American Water Heater Company in June 2006. Water heater set temperature: 130°F Visual observation showed the water heater to be in very poor condition with visual evidence of corrosion and leaks. TPR is continuously leaking. No visible maintenance records found on the water heater. The pipe material is copper.

Call Center - WQI Checklist

Photos

Ticket Number	21706
Location	Other
Title	Interior view of kitchen sink aerator



Call Center - WQI Checklist

Photos

Ticket Number	21706
Location	First Floor - Bathroom - Sink
Title	Interior view of hallway bathroom sink aerator

Call Center - WQI Checklist

Photos

Ticket Number	21706
Location	Second Floor - Bathroom 1 - Sink
Title	Interior view of master bathroom sink aerator

Friday 4 October 2024, 0800

Zone – D2, 1703 Tinker Ave
Location Code: D2-TINK1703

BLUF

The resident requested a WQI to determine water quality upon recently moving in. The resident looked up their past drinking water results and was concerned by the 0.032 µg/L Benzo(a)pyrene level, this result is below project screening level of 0.2 µg/L. The resident had no other water quality concerns. All water quality parameters collected were within expected ranges. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Based on the observed corrosion and leaking, it is recommended to replace the water heater.

A. Resident Demographic / Concerns
- Household consists of two (2) adults, and one (1) dog.
- Resident since 30 September 2024.
- Resident reported concern over the 0.032 µg/L Benzo(a)pyrene level, this result is significantly below project screening level of 0.2 µg/L. The results of the previous water sampling were discussed at length with the resident. It was explained that this measurement is in parts per billion (ppb) and that one ppb represents one microgram per liter of water (µg/l).

B. **Water Quality Observations and Results**
- Unit was previously sampled on 10 July 2024. Total Alkalinity, Benao(a)pyrene, and Copper were detected. All detections were below project screening levels.
- No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water.
- No unusual observations.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the kitchen sink, hallway bathroom sink, and the master bathroom shower for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.12 (cold)
    - 7.15 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 246.77 µS/cm (cold)
    - 261.44 µS/cm (hot)

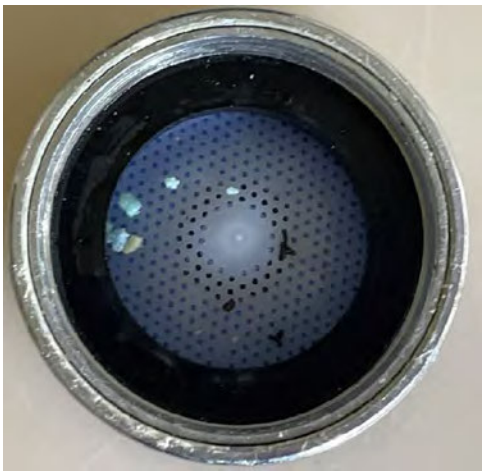
- Turbidity - (Expected Range: < 5.0 NTU)
  - 0.06 NTU (cold)
  - 0.00 NTU (hot)

- Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
  - 0.65 mg/L (cold)
  - 0.16 mg/L (hot)

- Temperature
  - 78.09 °F (cold)
  - 108.71 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 117.0 °F
  - Master bathroom sink – 115.5 °F

- Figure 1. Interior view of kitchen sink aerator. Many blue and black debris less than 2mm in size were observed, the blue debris is suspected to be corroded copper material from the water heater. Aerator was cleaned after inspection and debris were removed. The aerator is in good condition.



- Figure 2. Interior view of the hallway bathroom sink aerator. Debris was observed as described in Figure 1. The aerator is in good condition.

- Figure 3. Interior view of the master bathroom sink aerator. Debris was observed as described in Figure 1. The aerator is in good condition.

- Figure 4. Exterior view of the water heater. Water heater appears to be in very poor condition and is continuously leaking from the Temperature and Pressure Relief (TPR) valve.

C. Hot Water Heater

- 119-gallon electric water heater manufactured by American Water Heater Company in June 2006.
- Water heater set temperature: 130°F
- Visual observation showed the water heater to be in very poor condition with visual evidence of corrosion and leaks.
- TPR is continuously leaking.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment

No filters installed at the moment, but the resident has purchased a Clearly Filtered Water filter to install on the kitchen sink. This filer is NSF/ANSI rated.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures except the kitchen sink could reach a temperature of 115°F or above.
- No unusual observations were made from the hot or cold water; water was clear.

- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.
- Given the overall condition of the water heater and the continuously leakage from the TPR valve replacement is recommended.

F. Recommendations

- Follow up with EDWM water quality results when available.
- It is recommended that the water heater is replaced due to age, leaks, and corrosion.
- No additional actions recommended.

Conclusion

The inspection was conducted at the request of the resident upon recently moving in to determine water quality, no water quality concerns were reported. All water quality parameters collected during the inspection were within expected ranges. It is recommended that the water heater is replaced. Based on the observations made during the inspection, no further action is required regarding this WQI event. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

Residence:			1703 Tinker Avenue	1703 Tinker Avenue
Field Sample ID:			D2-TW-0008266-24092-N-WQI	D2-TW-0008266-24092-N-H-WQI
Sample Date:			2024-10-04	2024-10-04
Sample Type:			N	N
BAC (CFU/100ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241004-OLT-12**	
Coliform	None	None	0.00 U	--
E. coli	None	None	0.00 U	--
BAC (CFU/ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241004-OLT-12**	**SDG: 241004-OLT-12**
Heterotrophic Plate Count	None	None	**32.0**	**11.0**
Field Tests (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**		
Free Chlorine	None	4	0.160-0.650	0.160-0.650
GENCHEM (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67832**	
Alkalinity, Total (as CaCO3)	None	None	**58.6**	--
Total Organic Carbon	None	None	0.200 U	--
HC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67832**	
Petroleum Hydrocarbons (as Diesel)	None	None	47.0 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

Petroleum Hydrocarbons (as Gasoline)	None	None	50.0 U	--
Petroleum Hydrocarbons (as Motor Oil)	None	None	47.0 U	--
Petroleum Hydrocarbons, Total	None	None	ND	--

METAL (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67832**	
Copper	1300	1300	**36.9**	--
Lead	15	15	**0.170 J**	--
Mercury	2	2	0.0250 U	--

SVOC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67832**	
1-Methylnaphthalene	None	None	0.260 U	--
2-Methylnaphthalene	None	None	0.260 U	--
Acenaphthylene	None	None	0.260 U	--
Anthracene	None	None	0.260 U	--
Benzo(a)pyrene	0.2	0.2	0.0110 U	--
Benzo(b)fluoranthene	None	None	0.260 U	--
Benzo(g,h,i)perylene	None	None	0.260 U	--
Benzo(k)fluoranthene	None	None	0.260 U	--
Chrysene	None	None	0.260 U	--
Dibenz(a,h)anthracene	None	None	0.260 U	--
Fluorene	None	None	0.260 U	--
Indeno(1,2,3-c,d)pyrene	None	None	0.260 U	--
Naphthalene	None	None	0.260 U	--
Phenanthrene	None	None	0.260 U	--
Pyrene	None	None	0.260 U	--

VOC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67832**	

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

1,2,4-Trimethylbenzene	None	None	0.260 U	--
1,3,5-Trimethylbenzene	None	None	0.250 U	--
Benzene	5	5	0.250 U	--
Bromodichloromethane	None	None	0.250 U	--
Bromoform	None	None	0.300 U	--
Chloroform	None	None	0.250 U	--
Cumene	None	None	0.250 U	--
Dibromochloromethane	None	None	0.250 U	--
Ethylbenzene	700	700	0.250 U	--
m,p-Xylene	None	None	0.400 U	--
n-Butylbenzene	None	None	0.250 U	--
n-Propylbenzene	None	None	0.250 U	--
o-Xylene	None	None	0.250 U	--
sec-Butylbenzene	None	None	0.400 U	--
tert-Butylbenzene	None	None	0.400 U	--
Toluene	1000	1000	0.250 U	--
Total Trihalomethanes	80	None	ND	--
Xylenes, Total	10000	10000	ND	--

Notes:

-- indicates that the sample was Not Analyzed for the analyte
Results in green font also exceed the DOH MCL
Results in blue font also exceed the EPA MCL
Results from G1/G3 sampling, where the G3 result is greater than the G1 result, have a red border and the associated G1/G3 result in parentheses for comparison

mg/L = Milligrams per Liter

CFU/ml = Colony Forming Units per Milliliter

CFU/100ml = Colony Forming Units per 100 Milliliters

µg/L = Micrograms per Liter

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	1-21772
Call Date/Time	10/10/2024 7:22:16 AM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	10/10/2024 9:00:00 AM

Call Center Information

Caller/Resident Information

Name	
Address	312 Lehua Avenue
Command	
Branch	
Property Manager	
Date of move-in	10/1/2022 12:00:00 AM
Number of adults under 65	2
Number of adults 65 and older	0
Number of school age children under 18	3
Number of infants under the age of 2	0
Number and type of pets	0
Call Center Complaint Summary / Initial Notes	The resident requested a WQI due to concerns of brown water with a “oily” and “copper-like” odor coming from their fixtures. The resident collected a pre-flush sample of the water which was discolored with rust-like particulates. The municipality was conducting nearby water line maintenance during this time. Resident independently flushed the outside spigot for approximately ten hours on 9 September 2024 through 10 September 2024. The water was clear upon WQI visit.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	No
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	
Do you see any issues with the appearance or odor the water in your home?	Yes
Color or Appearance of Water	Brown / Yellow
Floating Particles	Brown / Orange
	rust
Taste	None
Odor	Other
	copper like
Staining	None
Scaling (visible surface buildup)	No

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?	No
Skin	None
Respiratory	None
Gastrointestinal	None
Headache	None
Dizziness	None
Cough	None
Vision	None
Other	None

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?	Kitchen,Bathroom,Upstairs,Downstairs,Other
Are your neighbors experiencing the same issue?	
Does it occur with just the cold water, the hot water, or both?	
Does it occur only when you first turn on the water or does it occur continuously?	
Are you aware of any recent nearby construction or maintenance activities?	

Premise Plumbing History

Premise Plumbing History	

Water Quality Concerns

Cold water Sampling Location	Kitchen
pH (standard units)	7.10
Conductivity (µS/cm)	250.45
FreeChlorine (mg/L or ppm)	0.05
Cold Temp (degrees F)	79.21
Hot water Sampling Location	Kitchen
pH (standard units)	7.31
Conductivity (µS/cm)	293.03
FreeChlorine (mg/L or ppm)	0.24
Hot Temp (degrees F)	119.57
Water Quality Notes	Unit was previously sampled on 12 April 2022. Chromium, copper, barium, total trihalomethanes were found. All detections were below project screening levels. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Free chlorine measurements in cold water were lower than the expect ranges.

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	No
Do you have point-of-use filters?	No
Kitchen sink	
Refrigerator	
Bathroom - first floor	
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	

Water Fixtures

Staining or Scale visible buildup on water fixtures	True
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Scaling / Debris / Particulates present
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	Other
Bathroom - other - Condition of aerator	Scaling / Debris / Particulates present

Other Concerns

Water Presure
Hot Water Temperature
Cross-Connection
Irrigation

Call Center - WQI Checklist

Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	No
	Follow up with EDWM water quality results when available. It is recommended that the respective treatment plants be verified for correct chlorine dosage. No additional actions recommended. The inspection was conducted at the request of the resident reporting brown water coming from fixtures. It is suspected that water main maintenance operations were the cause, as nearby residents also submitted water quality complaints during the time of water main maintenance. All water quality parameters collected during the inspection were within expected ranges, apart from free chlorine in cold water. It is recommended to verify appropriate chlorine dosage at servicing treatment plants. Based on the observations made during the inspection, no further action is required regarding this WQI event. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.
Other Site Visit Notes	Kitchen sink aerator: Unknown black material is integrated within the screen of the aerator. The aerator is in fair condition, replacement is recommended. Hallway bathroom sink aerator. No debris was observed. The aerator is in good condition. Water collected from the kitchen sink by resident on 9 September 2024. Rust-like particles were observed at the bottom of the container. Water was clear upon WQI inspection on 10 September 2024. 119.9 -gallon electric water heater manufactured by American Water Heater Company on 15 May 2015. Water heater set temperature: 135°F Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion. No visible maintenance records found on the water heater. The pipe material is copper.

Call Center - WQI Checklist

Photos

Ticket Number	21772
Location	First Floor - Bathroom - Sink
Title	Interior view of kitchen sink aerator

Call Center - WQI Checklist

Photos

Ticket Number	21772
Location	Other
Title	Water collected from kitchen sink tap

Call Center - WQI Checklist

Photos

Ticket Number	21772
Location	Second Floor - Bathroom 1 - Sink
Title	Interior view of the hallway bathroom sink aerator

Thursday 10 October 2024, 0900

Zone – A1, 312 Lehua Ave
Location Code: A1-LEHU0312

BLUF

The resident requested a WQI due to concerns of brown water with a "oily" and "copper-like" odor coming from their fixtures. The resident collected a pre-flush sample of the water which was discolored with rust-like particulates (Figure 3). It was confirmed that Public Works Utilities was conducting an exercising valve program during this time, but the residents were not notified nor given instruction regarding this operation. Resident independently flushed the outside spigot for approximately ten hours on 9 October 2024 through 10 October 2024. The water was clear upon WQI visit. All water quality parameters collected were within expected ranges, apart from cold water free chlorine. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Based on the observations made during the WQI inspection, it is recommended to reestablish disinfection residual by flushing nearby hydrants until it is detected, then flush the servicing line to the residence.

A. Resident Demographic / Concerns

- Household consists of two (2) adults, three (3) children, tortoise, fish.
- Resident for approximately 3 years.
- Resident reported concern of brown and odorous water.

B. **Water Quality Observations and Results**

- Unit was previously sampled on 12 April 2022. Chromium, copper, barium, total trihalomethanes were found. All detections were below project screening levels.
- No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water.
- Free chlorine measurements in cold water were lower than the expect ranges.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the kitchen sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.10 (cold)
    - 7.31 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 250.45 µS/cm (cold)
    - 293.03 µS/cm (hot)

- Turbidity - (Expected Range: < 5.0 NTU)
  - 0.43 NTU (cold)
  - 1.12 NTU (hot)

- Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
  - 0.05 mg/L (cold) **See Section E.**
  - 0.24 mg/L (hot)

- Temperature
  - 79.21 °F (cold)
  - 119.57 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 127.0 °F

- Additional WQI free chlorine measurements collected from hallway bathroom sink.
  - 0.05 mg/L (cold)
  - 0.19 mg/L (hot)

- Figure 1. Interior view of kitchen sink aerator. Unknown black material is integrated within the screen of the aerator. The aerator is in fair condition, replacement is recommended.

- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 3. Water collected from the kitchen sink by resident on 9 September 2024. Rust-like particles were observed at the bottom of the container. Water was clear upon WQI inspection on 10 October 2024.

C. Hot Water Heater
   - 119.9 -gallon electric water heater manufactured by American Water Heater Company on 15 May 2015.

- Water heater set temperature: 135°F
- Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment

No filters installed.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures could reach a temperature of 115°F or above.
- No unusual observations were made from the hot or cold water; water was clear.
- Free chlorine measurements in cold water were lower than the expected ranges, possibly due to disturbed corrosion scales and sediment from stagnant water reintroduced to the system because of a valve exercising program conducted in this zone.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations

- Follow up with EDWM water quality results when available.
- It is recommended that the respective treatment plants be verified for correct chlorine dosage.
- No additional actions recommended.

Conclusion

The inspection was conducted at the request of the resident reporting brown water coming from fixtures. It was confirmed that Public Works Utilities were conducting a valve exercising program that led to reintroducing stagnant water from previously isolated valves near Lanakila Ave and Franklin Ave. This is believed to be the source of this water quality complaint among other complaints from residences nearby. All water quality parameters collected during the inspection were within expected ranges, apart from free chlorine in cold water. Based on the observations made during the inspection, it is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, then flush appropriate service line entering the residence. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

Residence:			312 Lehua Avenue	312 Lehua Avenue
Field Sample ID:			A1-TW-0001519-24092-N-WQI	A1-TW-0001519-24092-N-H-WQI
Sample Date:			2024-10-10	2024-10-10
Sample Type:			N	N
BAC (CFU/100ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241010-OLT-19**	
Coliform	None	None	0.00 U	--
E. coli	None	None	0.00 U	--
BAC (CFU/ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241010-OLT-19**	**SDG: 241010-OLT-19**
Heterotrophic Plate Count	None	None	**5.00**	**9.00**
Field Tests (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**		
Free Chlorine	None	4	0.0500-0.240	0.0500-0.240
GENCHEM (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67972**	
Alkalinity, Total (as CaCO3)	None	None	**57.5**	--
Total Organic Carbon	None	None	0.200 U	--
HC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67972**	
Petroleum Hydrocarbons (as Diesel)	None	None	48.0 U	--
Petroleum Hydrocarbons (as Gasoline)	None	None	50.0 U	--
Petroleum Hydrocarbons (as Motor Oil)	None	None	48.0 U	--
Petroleum Hydrocarbons, Total	None	None	ND	--
METAL (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA67972**	
Copper	1300	1300	**6.60**	--
Lead	15	15	0.130 U	--
Mercury	2	2	0.0250 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

SVOC (µg/L)	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA67972	
1-Methylnaphthalene	None	None	0.250 U	--
2-Methylnaphthalene	None	None	0.250 U	--
Acenaphthylene	None	None	0.250 U	--
Anthracene	None	None	0.250 U	--
Benzo(a)pyrene	0.2	0.2	0.0100 U	--
Benzo(b)fluoranthene	None	None	0.250 U	--
Benzo(g,h,i)perylene	None	None	0.250 U	--
Benzo(k)fluoranthene	None	None	0.250 U	--
Chrysene	None	None	0.250 U	--
Dibenz(a,h)anthracene	None	None	0.250 U	--
Fluorene	None	None	0.250 U	--
Indeno(1,2,3-c,d)pyrene	None	None	0.250 U	--
Naphthalene	None	None	0.250 U	--
Phenanthrene	None	None	0.250 U	--
Pyrene	None	None	0.250 U	--

VOC (µg/L)	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA67972	
1,2,4-Trimethylbenzene	None	None	0.260 U	--
1,3,5-Trimethylbenzene	None	None	0.250 U	--
Benzene	5	5	0.250 U	--
Bromodichloromethane	None	None	0.250 U	--
Bromoform	None	None	**0.480 J**	--
Chloroform	None	None	0.250 U	--
Cumene	None	None	0.250 U	--
Dibromochloromethane	None	None	0.250 U	--
Ethylbenzene	700	700	0.250 U	--
m,p-Xylene	None	None	0.400 U	--
n-Butylbenzene	None	None	0.250 U	--
n-Propylbenzene	None	None	0.250 U	--
o-Xylene	None	None	0.250 U	--
sec-Butylbenzene	None	None	0.400 U	--
tert-Butylbenzene	None	None	0.400 U	--
Toluene	1000	1000	0.250 U	--
Total Trihalomethanes	80	None	**0.48**	--
Xylenes, Total	10000	10000	ND	--

Notes:

Table X-X

Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu, Hawaii

-- indicates that the sample was Not Analyzed for the analyte
Results in green font also exceed the DOH MCL
Results in blue font also exceed the EPA MCL
Results from G1/G3 sampling, where the G3 result is greater than the G1 result, have a red border and the associated G1/G3 result in pare

mg/L = Milligrams per Liter

CFU/ml = Colony Forming Units per Milliliter

CFU/100ml = Colony Forming Units per 100 Milliliters

µg/L = Micrograms per Liter

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	1-21797
Call Date/Time	10/11/2024 8:09:06 AM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	10/11/2024 11:00:00 AM

Call Center Information

Caller/Resident Information

Name	
Address	1001 Lowella Avenue
Command	
Branch	
Property Manager	
Date of move-in	6/1/2024 12:00:00 AM
Number of adults under 65	2
Number of adults 65 and older	0
Number of school age children under 18	0
Number of infants under the age of 2	0
Number and type of pets	1 cat, 1 dog
Call Center Complaint Summary / Initial Notes	The resident requested a WQI due to concerns of brown water with odorous water coming from their fixtures. Resident believed discoloration originated from their water heater, as this was observed only from hot water. However, this concern was reported during a valve exercising program that was active at the time in which other adjacent residences reported similar observations.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	Yes
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	One-time event only
Do you see any issues with the appearance or odor the water in your home?	Yes
Color or Appearance of Water	Brown / Yellow
Floating Particles	Brown / Orange
Taste	None
Odor	Other
	odorous
Staining	None
Scaling (visible surface buildup)	No

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?	No
Skin	None
Respiratory	None
Gastrointestinal	None
Headache	None
Dizziness	None
Cough	None
Vision	None
Other	None

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?	Kitchen,Bathroom,Upstairs
Are your neighbors experiencing the same issue?	Yes
Does it occur with just the cold water, the hot water, or both?	Only hot water
Does it occur only when you first turn on the water or does it occur continuously?	
Are you aware of any recent nearby construction or maintenance activities?	

Premise Plumbing History

Premise Plumbing History

Water Quality Concerns

Cold water Sampling Location	Kitchen
pH (standard units)	7.39
Conductivity (µS/cm)	262.09
FreeChlorine (mg/L or ppm)	0.03
Cold Temp (degrees F)	83.33
Hot water Sampling Location	Kitchen
pH (standard units)	7.40
Conductivity (µS/cm)	285.13
FreeChlorine (mg/L or ppm)	0.03
Hot Temp (degrees F)	117.73
Water Quality Notes	Unit was previously sampled on 26 April 2024. Copper, and total trihalomethanes were found. All detections were below project screening levels. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water.• Free chlorine measurements in hot and cold water were lower than the expect ranges. TURB: 0.32 NTU (cold), 0.0 NTU (hot)

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	
Do you have point-of-use filters?	
Kitchen sink	
Refrigerator	
Bathroom - first floor	
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	

Water Fixtures

Staining or Scale visible buildup on water fixtures	
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Scaling / Debris / Particulates present
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	Sink faucet
Bathroom - second floor - Condition of aerator	Scaling / Debris / Particulates present
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	
Bathroom - other - Condition of aerator	

Other Concerns

Water Presure
Hot Water Temperature
Cross-Connection
Irrigation

Call Center - WQI Checklist

Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	Yes
	Follow up with EDWM water quality results when available. It is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, along with the flushing of the service line of the residence. No additional actions recommended.
Other Site Visit Notes	Kitchen sink aerator: Unknown black material is integrated within the screen of the aerator. The aerator is in fair condition, replacement is recommended. Hallway bathroom sink aerator: No debris was observed. The aerator is in good condition. Master bathroom sink aerator. Debris of unknown material were observed, possibly substantiating the resident's claim of sacrificial anode corrosion, however this could not be confirmed at the time of inspection. The aerator is in good condition. 119.9 -gallon electric water heater manufactured by American Water Heater Company in 2012. Water heater set temperature: 130°F Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion. No visible maintenance records found on the water heater. The pipe material is copper.

Call Center - WQI Checklist

Photos

Ticket Number	21797
Location	[No Coverage]
Title	20241011_224311000_iOS.jpg

Call Center - WQI Checklist

Photos

Ticket Number	21797
Location	[No Coverage]
Title	20241011_230257000_iOS.jpg

Friday 11 October 2024, 1100

Zone – A1, 1001 Lowella Ave
Location Code: A1-LOWE1001

BLUF

The resident requested a WQI due to concerns of brown and odorous water coming from their fixtures. Resident believed discoloration originated from their water heater, as this was observed only from hot water. However, this concern was reported during a valve exercising program that was active at the time in which other adjacent residences reported similar observations. During the visit, no indications of water heater malfunction were present despite unverified claims from the resident regarding Hunts Military Communities technician's reports of the state of their water heater. Apart from hot and cold-water free chlorine, all water quality parameters collected were within expected ranges. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Based on the observations made during the WQI inspection, it is recommended to reestablish disinfection residual by flushing nearby hydrants until it is detected, then flush the servicing line to the residence. Upon verification of the reports from Hunt Military Communities technicians, further recommendations regarding the water heater will be provided.

A. Resident Demographic / Concerns

- Household consists of two (2) adults, one (1) cat, and one (1) dog.
- Resident since June 2024.
- Resident reported concerns of brown and odorous water.
- Resident reported concerns of water heater malfunction. The resident had two technicians from Hunt Military Communities to flush their water heater on separate occasions between 8 October 2024 and 10 October 2024. Resident reported water heater had significant scale build-up (Figure 4.) and that both technicians indicated that the sacrificial anode had significant corrosion. Attempts to verify these claims have been made but reports will not be available for review until 15 October 2024.

B. **Water Quality Observations and Results**

- Unit was previously sampled on 26 April 2024. Copper, total alkalinity, bromodichloromethane, dibromochloromethane, bromoform, and total trihalomethanes were found. All detections were below project screening levels.
- No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water.
- Free chlorine measurements in hot and cold water were lower than the expect ranges.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the master bathroom sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.39 (cold)
    - 7.40 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 262.09 µS/cm (cold)
    - 285.13 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.32 NTU (cold)
    - 0.00 NTU (hot)

  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
    - 0.03 mg/L (cold) **See Section E.**
    - 0.03 mg/L (hot) See **Section E.**

  - Temperature
    - 83.33 °F (cold)
    - 117.73 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 125.4 °F
  - Master bathroom sink – 124.1 °F

- Additional WQI free chlorine measurements collected from hallway bathroom sink.
  - <0.02 mg/L (cold)
  - <0.02 mg/L (hot)

- Additional WQI free chlorine measurements collected from master bathroom sink.
  - <0.02 mg/L (cold)
  - <0.02 mg/L (hot)

- Figure 1. Interior view of kitchen sink aerator. Unknown black material is integrated within the screen of the aerator. The aerator is in fair condition. Replacement is recommended.

- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 3. Interior view of the master bathroom sink aerator. Debris of unknown material were observed, possibly substantiating the resident's claim of sacrificial anode corrosion, however this could not be confirmed at the time of inspection. The aerator is in good condition.

- Figure 4. View of resident's driveway post water heater flush. Scale was observed.

C. Hot Water Heater
- 119.9 -gallon electric water heater manufactured by American Water Heater Company in 2012.
- Water heater set temperature: 130°F
- Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment
No filters installed.

E. Overall Assessment
- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures could reach a temperature of 115°F or above.
- No unusual observations were made from the hot or cold water; water was clear.
- Free chlorine measurements in hot and cold water were lower than the expected ranges, possibly due to disturbed corrosion scales and sediment from stagnant water reintroduced to the system because of a valve exercising program conducted in this zone.
- Despite resident's concerns of their water heater, no signs of water heater malfunction at the time of the inspection.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations
- Follow up with EDWM water quality results when available.
- It is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, along with the flushing of the service line of the residence.
- No additional actions recommended.

Conclusion

The inspection was conducted at the request of the resident reporting brown water coming from fixtures. Resident reported concerns of water heater malfunction from verbal accounts by Hunt Military Communities. Upon WQI visitation on 11 October 2024, inspections of the water heater provided no visual indications of external deterioration or corrosion. It was confirmed that Public Works Utilities were conducting a valve exercising program that led to reintroducing stagnant water from isolated valves near Lanakila Ave and Franklin Ave. It is unclear if this complaint is related to other recent WQI complaints because of a valve exercising program occurring in the same neighborhood or if this is an isolated incident due to the water heater. Upon verification of the reports from Hunt Military Communities technicians, further recommendations regarding the water heater will be provided.

All water quality parameters collected during the inspection were within expected ranges, apart from free chlorine in cold and hot water. Based on the observations made during the inspection, it is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, then flush appropriate service line entering the residence. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results

Residence:			1001 Lowella Avenue	1001 Lowella Avenue	1001 Lowella Avenue	1001 Lowella Avenue
Field Sample ID:			A1-TW-0001530-24092-N-WQI	A1-TW-0001530-24092-N-H-WQI	A1-TW-0001530-24092-N-WQI-R1	A1-TW-0001530-24092-N-H-WQI-R1
Sample Date:			2024-10-11	2024-10-11	2024-10-31	2024-10-31
Sample Type:			N	N	N	N
BAC (CFU/100ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241011-2568-1200**		**SDG: 241031-2568-1283**	
Coliform	None	None	0.00 U	--	0.00 U	--
E. coli	None	None	0.00 U	--	0.00 U	--
BAC (CFU/ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241011-2568-1200**	**SDG: 241011-2568-1200**	**SDG: 241031-2568-1283**	**SDG: 241031-2568-1283**
Heterotrophic Plate Count	None	None	**2.00**	2.00 U	2.00 U	2.00 U
Field Tests (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**				
Free Chlorine	None	4	0.0300	0.0300	0.320-0.800	0.320-0.800
GENCHEM (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68018**		**SDG: DA68476**	
Alkalinity, Total (as CaCO3)	None	None	**60.6**	--	**59.7**	--
Total Organic Carbon	None	None	0.200 U	--	0.200 U	--
HC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68018**		**SDG: DA68476**	
Petroleum Hydrocarbons (as Diesel)	None	None	47.0 U	--	48.0 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results

Petroleum Hydrocarbons (as Gasoline)	None	None	50.0 U	--	50.0 U	--
Petroleum Hydrocarbons (as Motor Oil)	None	None	47.0 U	--	48.0 U	--
Petroleum Hydrocarbons, Total	None	None	ND	--	ND	--
METAL (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68018**		**SDG: DA68476**	
Copper	1300	1300	**15.5**	--	**13.8**	--
Lead	15	15	**0.130 J**	--	0.130 U	--
Mercury	2	2	0.0250 U	--	0.0250 U	--
SVOC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68018**		**SDG: DA68476**	
1-Methylnaphthalene	None	None	0.250 U	--	0.250 U	--
2-Methylnaphthalene	None	None	0.250 U	--	0.250 U	--
Acenaphthylene	None	None	0.250 U	--	0.250 U	--
Anthracene	None	None	0.250 U	--	0.250 U	--
Benzo(a)pyrene	0.2	0.2	0.0100 U	--	0.0100 U	--
Benzo(b)fluoranthene	None	None	0.250 U	--	0.250 U	--
Benzo(g,h,i)perylene	None	None	0.250 U	--	0.250 U	--
Benzo(k)fluoranthene	None	None	0.250 U	--	0.250 U	--
Chrysene	None	None	0.250 U	--	0.250 U	--
Dibenz(a,h)anthracene	None	None	0.250 U	--	0.250 U	--
Fluorene	None	None	0.250 U	--	0.250 U	--
Indeno(1,2,3-c,d)pyrene	None	None	0.250 U	--	0.250 U	--
Naphthalene	None	None	0.250 U	--	0.250 U	--
Phenanthrene	None	None	0.250 U	--	0.250 U	--
Pyrene	None	None	0.250 U	--	0.250 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results

VOC (µg/L)	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA68018		SDG: DA68476	
1,2,4-Trimethylbenzene	None	None	0.260 U	--	0.260 U	--
1,3,5-Trimethylbenzene	None	None	0.250 U	--	0.250 U	--
Benzene	5	5	0.250 U	--	0.250 U	--
Bromodichloromethane	None	None	0.250 U	--	**0.270 J**	--
Bromoform	None	None	**0.460 J**	--	**0.660**	--
Chloroform	None	None	0.250 U	--	0.250 U	--
Cumene	None	None	0.250 U	--	0.250 U	--
Dibromochloromethane	None	None	0.250 U	--	**0.760**	--
Ethylbenzene	700	700	0.250 U	--	0.250 U	--
m,p-Xylene	None	None	0.400 U	--	0.400 U	--
n-Butylbenzene	None	None	0.250 U	--	0.250 U	--
n-Propylbenzene	None	None	0.250 U	--	0.250 U	--
o-Xylene	None	None	0.250 U	--	0.250 U	--
sec-Butylbenzene	None	None	0.400 U	--	0.400 U	--
tert-Butylbenzene	None	None	0.400 U	--	0.400 U	--
Toluene	1000	1000	0.250 U	--	0.250 U	--
Total Trihalomethanes	80	None	**0.46**	--	**1.69**	--
Xylenes, Total	10000	10000	ND	--	ND	--

Notes:

-- indicates that the sample was Not Analyzed for the analyte
Results in green font also exceed the DOH MCL
Results in blue font also exceed the EPA MCL
Results from G1/G3 sampling, where the G3 result is greater than the G1 result, have a red border and the associated G1/G3 result in parentheses for comparison
mg/L = Milligrams per Liter

CFU/ml = Colony Forming Units per Milliliter

CFU/100ml = Colony Forming Units per 100 Milliliters

µg/L = Micrograms per Liter

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	1-21796
Call Date/Time	10/11/2024 8:06:39 AM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	10/11/2024 10:00:00 AM

Call Center Information

Caller/Resident Information

Name	
Address	306 Lehua Avenue
Command	
Branch	
Property Manager	
Date of move-in	4/1/2022 12:00:00 AM
Number of adults under 65	2
Number of adults 65 and older	0
Number of school age children under 18	2
Number of infants under the age of 2	0
Number and type of pets	0
Call Center Complaint Summary / Initial Notes	resident has concerns of brown and odorous water coming from fixtures. It was determined that an exercising valve program was active during the time of the complaint, but the residents were not notified nor given instruction regarding this operation.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	Yes
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	One-time event only
Do you see any issues with the appearance or odor the water in your home?	Yes
Color or Appearance of Water	
	brown and odorous
Floating Particles	Brown / Orange
Taste	None
Odor	Other
	odorous
Staining	None
Scaling (visible surface buildup)	No

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?	No
Skin	None
Respiratory	None
Gastrointestinal	None
Headache	None
Dizziness	None
Cough	None
Vision	None
Other	None

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?	I don't know,Kitchen,Bathroom
Are your neighbors experiencing the same issue?	I don't know
Does it occur with just the cold water, the hot water, or both?	Both hot & cold water
Does it occur only when you first turn on the water or does it occur continuously?	
Are you aware of any recent nearby construction or maintenance activities?	

Premise Plumbing History

Premise Plumbing History	

Water Quality Concerns

Cold water Sampling Location	Kitchen
pH (standard units)	7.46
Conductivity (µS/cm)	261.80
FreeChlorine (mg/L or ppm)	0.05
Cold Temp (degrees F)	76.93
Hot water Sampling Location	Kitchen
pH (standard units)	7.42
Conductivity (µS/cm)	279.35
FreeChlorine (mg/L or ppm)	0.07
Hot Temp (degrees F)	106.45
Water Quality Notes	Unit was previously sampled on 18 August 2023. Copper, barium, selenium, petroleum hydrocarbons (as Diesel), total trihalomethanes, bromodichloromethane, and dibromochloromethane were found. All detections were below project screening levels. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Free chlorine measurements in cold water were lower than the expect ranges TURB: 0.00 NTU (cold), 0.00 NTU (hot)

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	No
Do you have point-of-use filters?	
Kitchen sink	
Refrigerator	
Bathroom - first floor	
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	

Water Fixtures

Staining or Scale visible buildup on water fixtures	
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Scaling / Debris / Particulates present
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	Sink faucet
Bathroom - second floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	
Bathroom - other - Condition of aerator	

Other Concerns

Water Presure	
Hot Water Temperature	
Cross-Connection	
Irrigation	

Call Center - WQI Checklist

Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	Yes
	Follow up with EDWM water quality results when available. It is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, along with the flushing of the service line of the residence. No additional actions recommended.
Other Site Visit Notes	Kitchen sink aerator: Unknown black material is integrated within the screen of the aerator. The aerator is in fair condition, replacement is recommended. Hallway bathroom sink aerator: No debris was observed. The aerator is in good condition. Hallway bathroom sink aerator: No debris was observed. The aerator is in good condition. The gasket appeared to be degrading. Replacement of the gasket is recommended.

Call Center - WQI Checklist

Photos

Ticket Number	21796
Location	[No Coverage]
Title	Interior View of Kitchen Sink Aerator

Call Center - WQI Checklist

Photos

Ticket Number	21796
Location	First Floor - Bathroom - Sink
Title	Interior view of the hallway bathroom sink aerator

Call Center - WQI Checklist

Photos

Ticket Number	21796
Location	Second Floor - Bathroom 1 - Sink
Title	Interior view of the hallway bathroom sink aerator

Friday 11 October 2024, 1000

Zone – A1, 306 Lehua Ave
Location Code: A1-LEHU0306

BLUF

The resident requested a WQI due to concerns of brown and odorous water coming from their fixtures. It was determined that an exercising valve program was active during the time of the complaint, but the residents were not notified nor given instruction regarding this operation. The water was clear upon WQI visit. No other water quality concerns were reported regarding appearance or odor. Aside from hot and cold water free chlorine all water quality parameters collected were within expected ranges, apart from hot and cold-water free chlorine. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Based on the observations made during the WQI inspection, it is recommended to reestablish disinfection residual by flushing nearby hydrants until it is detected, then flush the servicing line to the residence.

A. Resident Demographic / Concerns

- Household consists of two (2) adults and two (2) children.
- Resident since approximately April 2022.
- Resident reported concern of brown and odorous water.

B. Water Quality Observations and Results

- Unit was previously sampled on 18 August 2023. Copper, barium, selenium, petroleum hydrocarbons (as Diesel), total trihalomethanes, bromodichloromethane, and dibromochloromethane were found. All detections were below project screening levels.
- No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water.
- Free chlorine measurements in cold water were lower than the expect ranges.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the kitchen sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.46 (cold)
    - 7.42 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 261.80 µS/cm (cold)
    - 279.35 µS/cm (hot)

- Turbidity - (Expected Range: < 5.0 NTU)
  - 0.00 NTU (cold)
  - 0.00 NTU (hot)

- Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
  - 0.05 mg/L (cold) See Section E.
  - 0.07 mg/L (hot) See Section E.

- Temperature
  - 76.93 °F (cold)
  - 106.45 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 116.4 °F
  - Master bathroom sink – 117.1 °F

- Additional WQI free chlorine measurements collected from hallway bathroom sink.
  - 0.04 mg/L (cold)
  - 0.02 mg/L (hot)

- Additional WQI free chlorine measurements collected from master bathroom sink.
  - 0.02 mg/L (cold)
  - 0.03 mg/L (hot)

- Figure 1. Interior view of kitchen sink aerator. Unknown black material is integrated within the screen of the aerator. The aerator is in fair condition, replacement is recommended.

- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 3. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in good condition. The gasket appeared to be degrading. Replacement of the gasket is recommended.

C. Hot Water Heater

- 119.9 -gallon solar electric water heater manufactured by American Water Heater Company in 2007.
- Water heater set temperature: 125°F
- Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment

No filters installed.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due

to the different instruments. The WQI team confirmed all hot water fixtures except the kitchen sink could reach a temperature of 115°F or above.

- No unusual observations were made from the hot or cold water; water was clear.
- Free chlorine measurements in hot and cold water were lower than the expected ranges, possibly due to disturbed corrosion scales and sediment from stagnant water reintroduced to the system because of a valve exercising program conducted in this zone.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations

- Follow up with EDWM water quality results when available.
- It is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, along with the flushing of the service line of the residence.
- No additional actions recommended.

Conclusion

The inspection was conducted at the request of the resident reporting brown water coming from fixtures. It was confirmed that Public Works Utilities were conducting a valve exercising program that led to reintroducing stagnant water from isolated valves near Lanakila Ave and Franklin Ave. This is believed to be the source of this water quality complaint. All water quality parameters collected during the inspection were within expected ranges, apart from free chlorine in cold and hot water. It is recommended that Public Works Utilities flush nearby hydrants until disinfection residual is detected, then flush appropriate service line entering the residence. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Summary of Chemistry Results
Zone A1
Drinking Water Sampling, Joint Base Pearl Harbor - Hickam, Oahu, Hawaii

Notes:
ND = Not Detected
ISP = Incident Specific Parameter
EAL = DOH Environmental Action Level
EPA MCL = EPA Maximum Contaminant Level
All Results shown in Parts per Billion (ppb), with the exception of Field and Bacterial Test results
Parts per Million (ppm)
Parts per Thousand (ppth)
§ - Exceeds Screening Level
-- = No Information Available
N (Normal) = Full compliance sample
FD (Field Duplicate) = Extra sample taken for quality control
N (Grab, Resample) = Additional follow-up sample
MPN/mL = Most probable number per milliliter

			Location ID:	A1-LEHU0306			
			Location Type:	Residence			
			Address:	306 Lehua Avenue			
			Field Sample ID:	A1-TW-0001516-24092-N-WQI	A1-TW-0001516-24092-N-H-WQI	A1-TW-0001516-24092-N-WQI-R1	A1-TW-0001516-24092-N-H-WQI-R1
			Sample Date:	2024-10-11	2024-10-11	2024-11-06	2024-11-06
			Sample Type:	N (Normal)	N (Normal)	N (Normal)	N (Normal)
Method Group	**Analyte**	**DOH Project Screening Level**	**Basis of Project Screening Level**				
Bacterial Test (in 100 mL)	Coliform	--	--	Absent	--	Absent	--
	E. coli	--	--	Absent	--	Absent	--
Bacterial Test (MPN/mL)	Heterotrophic Plate Count	--	--	1.00	6.00	4.00	ND
Field Test (ppb)	Free Chlorine	4000	MCL	50.0	70.0	300	470
Field Test (pH)	pH	--	--	7.47	7.42	7.25	7.38
Field Test (ms/cm)	Specific Conductivity	--	--	0.260	0.280	0.320	0.300
Field Test (degrees Celcuis)	Temperature	--	--	24.7	41.4	24.2	39.9
Field Test (nephelometric turbidity unit)	Turbidity	5	MCL	0.00500	0.00	0.00	0.00
General Chemistry (ppb)	Alkalinity, Total (as CaCO3)	--	--	59200	--	56300	--
	Total Organic Carbon	--	--	ND	--	ND	--
Hydrocarbons (ppb)	Petroleum Hydrocarbons (as Diesel)	--	--	ND	--	ND	--
	Petroleum Hydrocarbons (as Gasoline)	--	--	ND	--	ND	--
	Petroleum Hydrocarbons (as Oil)	--	--	ND	--	ND	--
	Petroleum Hydrocarbons, Total	--	--	ND	--	ND	--
Metals (ppb)	Copper	1300	MCL	12.4	--	18.3	--
	Lead	15	MCL	ND	--	ND	--
	Mercury	2	MCL	ND	--	ND	--
Synthetic Organic Compounds (ppb)	1-Methylnaphthalene	--	--	ND	--	ND	--
	2-Methylnaphthalene	--	--	ND	--	ND	--
	Acenaphthylene	--	--	ND	--	ND	--
	Anthracene	--	--	ND	--	ND	--
	Benzo(a)pyrene	0.2	MCL	ND	--	0.0120	--
	Benzo(b)fluoranthene	--	--	ND	--	ND	--

Summary of Chemistry Results
Zone A1
Drinking Water Sampling, Joint Base Pearl Harbor - Hickam, Oahu, Hawaii

Notes:
ND = Not Detected
ISP = Incident Specific Parameter
EAL = DOH Environmental Action Level
EPA MCL = EPA Maximum Contaminant Level
All Results shown in Parts per Billion (ppb), with the exception of Field and Bacterial Test results
Parts per Million (ppm)
Parts per Thousand (ppth)
§ - Exceeds Screening Level
-- = No Information Available
N (Normal) = Full compliance sample
FD (Field Duplicate) = Extra sample taken for quality control
N (Grab, Resample) = Additional follow-up sample
MPN/mL = Most probable number per milliliter

			Location ID:	A1-LEHU0306			
			Location Type:	Residence			
			Address:	306 Lehua Avenue			
			Field Sample ID:	A1-TW-0001516-24092-N-WQI	A1-TW-0001516-24092-N-H-WQI	A1-TW-0001516-24092-N-WQI-R1	A1-TW-0001516-24092-N-H-WQI-R1
			Sample Date:	2024-10-11	2024-10-11	2024-11-06	2024-11-06
			Sample Type:	N (Normal)	N (Normal)	N (Normal)	N (Normal)
Method Group	**Analyte**	**DOH Project Screening Level**	**Basis of Project Screening Level**				
Synthetic Organic Compounds (ppb)	Benzo(g,h,i)perylene	--	--	ND	--	ND	--
	Benzo(k)fluoranthene	--	--	ND	--	ND	--
	Chrysene	--	--	ND	--	ND	--
	Dibenz(a,h)anthracene	--	--	ND	--	ND	--
	Fluorene	--	--	ND	--	ND	--
	Indeno(1,2,3-c,d)pyrene	--	--	ND	--	ND	--
	Naphthalene	--	--	ND	--	ND	--
	Phenanthrene	--	--	0.290	--	ND	--
	Pyrene	--	--	ND	--	ND	--
Volatile Organic Compounds (ppb)	1,2,4-Trimethylbenzene	--	--	ND	--	ND	--
	1,3,5-Trimethylbenzene	--	--	ND	--	ND	--
	Benzene	5	MCL	ND	--	ND	--
	Cumene	--	--	ND	--	ND	--
	Ethylbenzene	700	MCL	ND	--	ND	--
	m,p-Xylene	--	--	ND	--	ND	--
	n-Butylbenzene	--	--	ND	--	ND	--
	n-Propylbenzene	--	--	ND	--	ND	--
	o-Xylene	--	--	ND	--	ND	--
	sec-Butylbenzene	--	--	ND	--	ND	--
	tert-Butylbenzene	--	--	ND	--	ND	--
	Toluene	1000	MCL	ND	--	ND	--
	Xylenes, Total	10000	MCL	ND	--	ND	--
Trihalomethanes (ppb)	Bromodichloromethane	--	--	ND	--	ND	--

Summary of Chemistry Results
Zone A1
Drinking Water Sampling, Joint Base Pearl Harbor - Hickam, Oahu, Hawaii

Notes:
ND = Not Detected
ISP = Incident Specific Parameter
EAL = DOH Environmental Action Level
EPA MCL = EPA Maximum Contaminant Level
All Results shown in Parts per Billion (ppb), with the exception of Field and Bacterial Test results
Parts per Million (ppm)
Parts per Thousand (ppth)
§ - Exceeds Screening Level
-- = No Information Available
N (Normal) = Full compliance sample
FD (Field Duplicate) = Extra sample taken for quality control
N (Grab, Resample) = Additional follow-up sample
MPN/mL = Most probable number per milliliter

			Location ID:	A1-LEHU0306			
			Location Type:	Residence			
			Address:	306 Lehua Avenue			
			Field Sample ID:	A1-TW-0001516-24092-N-WQI	A1-TW-0001516-24092-N-H-WQI	A1-TW-0001516-24092-N-WQI-R1	A1-TW-0001516-24092-N-H-WQI-R1
			Sample Date:	2024-10-11	2024-10-11	2024-11-06	2024-11-06
			Sample Type:	N (Normal)	N (Normal)	N (Normal)	N (Normal)
Method Group	**Analyte**	**DOH Project Screening Level**	**Basis of Project Screening Level**				
Trihalomethanes (ppb)	Bromoform	--	--	0.420	--	ND	--
	Chloroform	--	--	ND	--	ND	--
	Dibromochloromethane	--	--	ND	--	0.290	--
	Total Trihalomethanes	80	MCL	0.420	--	0.290	--

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	1-22002
Call Date/Time	10/23/2024 7:35:37 AM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	10/23/2024 10:00:00 AM

Call Center Information

Caller/Resident Information

Name	Robin Bailey
Address	5629 Dovekie Avenue
Command	
Branch	
Property Manager	
Date of move-in	1/1/2024 12:00:00 AM
Number of adults under 65	2
Number of adults 65 and older	0
Number of school age children under 18	0
Number of infants under the age of 2	0
Number and type of pets	2 dogs
Call Center Complaint Summary / Initial Notes	The resident requested a WQI due to concerns of an odor coming from the washing machine, dishwasher, and showers. The resident also stated that their dog has developed rashes after bathing in the water.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	Yes
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	Ongoing
Do you see any issues with the appearance or odor the water in your home?	Yes
Color or Appearance of Water	None
Floating Particles	None
Taste	None
Odor	Musty,Other
	musty, fishy odor
Staining	None
Scaling (visible surface buildup)	No

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?	Yes
Skin	Pets
	one dog is getting rashes after washing with an outside spigot
Respiratory	None
Gastrointestinal	None
Headache	None
Dizziness	None
Cough	None
Vision	None
Other	None

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?	Kitchen,Bathroom
Are your neighbors experiencing the same issue?	
Does it occur with just the cold water, the hot water, or both?	
Does it occur only when you first turn on the water or does it occur continuously?	
Are you aware of any recent nearby construction or maintenance activities?	

Premise Plumbing History

Premise Plumbing History	

Water Quality Concerns

Cold water Sampling Location	Kitchen
pH (standard units)	7.23
Conductivity (µS/cm)	244.16
FreeChlorine (mg/L or ppm)	0.88
Cold Temp (degrees F)	79.86
Hot water Sampling Location	Kitchen
pH (standard units)	7.47
Conductivity (µS/cm)	275.82
FreeChlorine (mg/L or ppm)	0.40
Hot Temp (degrees F)	119.62
Water Quality Notes	Unit was previously sampled on 18 August 2022. Chromium, copper, lead, barium, total trihalomethanes, dibromochloromethane, and bromoform were found. All detections were below project screening levels. No sheen, particles, discoloration, or cloudiness were observed in the hot or cold water. No odors were observed from hot or cold water of inside or outside fixtures. The “fishy” odor from the dishes was observed specifically on ceramic dishes after sitting in the dishwasher overnight. Neither the dishwasher nor the washing machine presented any odor. TURB: 0.41 NTU (cold), 0.62 NTU (hot)

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	
Do you have point-of-use filters?	
Kitchen sink	
Refrigerator	
Bathroom - first floor	
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	

Water Fixtures

Staining or Scale visible buildup on water fixtures	
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Looks new / clean
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	Sink faucet
Bathroom - second floor - Condition of aerator	Looks new / clean
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	
Bathroom - other - Condition of aerator	

Other Concerns

Water Presure	
Hot Water Temperature	
Cross-Connection	
Irrigation	

Call Center - WQI Checklist

Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	Yes
	Follow up with EDWM water quality results when available. It is recommended to properly ventilate units after showers, deep clean the washing machine, and switch dishwashing detergent The inspection was conducted at the request of the resident due to a pet's rash and odors from the washing machine, dishwasher, and showers. It is recommended to properly ventilate the washing machine, dishwasher, and shower areas after usage, deep clean the washing machine, and switch dishwashing detergent. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action regarding this WQI is necessary at this time. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.
Other Site Visit Notes	Kitchen sink aerator: No debris was observed. The aerator is in good condition. Hallway bathroom sink aerator: No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in fair condition. Master bathroom sink aerator: No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in fair condition. 40-gallon gas water heater manufactured by Rheem on 4 July 2018. Water heater thermostat dial was set to approximately 125 °F - 135°F. Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion. No visible maintenance records found on the water heater. The pipe material is copper.

Call Center - WQI Checklist

Photos

Ticket Number	22002
Location	[No Coverage]
Title	kitchen sink aerator.jpg

Call Center - WQI Checklist

Photos

Ticket Number	22002
Location	[No Coverage]
Title	MB aerator.jpg

Wednesday 23 October 2024, 1000

Zone – A3, 5629 Dovekie Ave
Location Code: A3-DOVE5629

BLUF

The resident requested a WQI due to concerns of an odor coming from the washing machine, dishwasher, and showers. The resident also stated that their dog has developed rashes after bathing in the water. It is recommended to properly ventilate the washing machine, dishwasher, and shower areas after usage, deep clean the washing machine to remove any residual compounds, and switch dishwashing detergent. It is also recommended to consult a medical professional to address the dermatological issues. Water quality parameters collected were within expected ranges. No sheen, particles, discoloration, cloudiness, or odors were observed in the hot or cold water. Based on the observations made during the WQI inspection, no immediate concerns regarding water quality were identified.

A. Resident Demographic / Concerns

- Household consists of two (2) adults and two (2) dogs.
- Husband has been the resident at this home since January 2024. The wife moved into the home in September 2024.
- The resident reported "musty" and "fishy" odors from clothes and dishes after washing. Regarding their shower, the resident did not report that the water itself had an odor but that the odor was noticeable on their skin upon drying. The resident stated that the odor is not always present. The resident could not determine if the odor was coming from both the hot and cold water. The wife observed these odors within the first week of moving in. The husband did not originally notice the odor at the time he moved into the residence. The residents did not report any concerns with the taste of the water.
- One dog has abdominal skin irritation after washing with an outside spigot. The other dog does not have these symptoms. The dogs have a veterinarian visit scheduled for 23 October 2024.

B. Water Quality Observations and Results

- Unit was previously sampled on 18 August 2022. Chromium, copper, lead, barium, total trihalomethanes, dibromochloromethane, and bromoform were found. All detections were below project screening levels.
- No sheen, particles, discoloration, or cloudiness were observed in the hot or cold water.
- No odors were observed from hot or cold water of inside or outside fixtures. The "fishy" odor from the dishes was observed specifically on ceramic dishes after sitting in the dishwasher overnight. Neither the dishwasher nor the washing machine presented any odor.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the kitchen sink and hallway bathroom for rapid TPH test.
    - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.

  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.23 (cold)
    - 7.47 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 244.16 µS/cm (cold)
    - 275.82 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.41 NTU (cold)
    - 0.62 NTU (hot)

  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
    - 0.88 mg/L (cold)
    - 0.40 mg/L (hot)

  - Temperature
    - 79.86 °F (cold)
    - 119.62 °F (hot)

- WQI hot water temperature results collected.
    - Hallway bathroom sink – 130.2 °F
    - Master bathroom sink – 130.3 °F

- Figure 1. Interior view of kitchen sink aerator. No debris was observed. The aerator is in good condition.

- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in fair condition.

- Figure 3. Interior view of the master bathroom sink aerator. No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in fair condition.

- Figure 4. The polyvinyl alcohol film encasing the detergent pods is disintegrating and the white material has discolored, possibly due to humidity exposure. The dishwashing pods may not function as intended.

C. Hot Water Heater

- 40-gallon gas water heater manufactured by Rheem on 4 July 2018.
- Water heater thermostat dial was set to approximately 125 °F - 135°F.
- Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment

No filters installed.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures could reach a temperature of 115°F or above.

- No unusual observations were made from the hot or cold water; water was clear.
- The "fishy" odor was present in ceramic dishes after sitting in the dishwasher overnight. The odor was not present in any silverware, cups, or pans under the same conditions. No odor was observed inside the dishwasher unit. The cause of the odor may be humidity, lack of ventilation after use of the dishwasher, or deterioration of the detergent pods (Figure 4).
- The washing machine's "musty" odor may be related to machine cleanliness, overloading the unit, or poor ventilation of the area after machine use. Cleaning the washing machine, limiting load size, or using appropriate amounts of detergent may reduce odors.
- There are no apparent fixture concerns contributing to the resident's skin odor after showering.
- Water quality parameters collected on site did not indicate any evidence of causative agents that may contribute to skin irritation. Further conclusions may be made by a medical professional.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations
- Follow up with EDWM water quality results when available.
- It is recommended to properly ventilate units after showers, deep clean the washing machine, and switch dishwashing detergent.

Conclusion

The inspection was conducted at the request of the resident due to a pet's rash and odors from the washing machine, dishwasher, and showers. It is recommended to properly ventilate the washing machine, dishwasher, and shower areas after usage, deep clean the washing machine, and switch dishwashing detergent. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action regarding this WQI is necessary at this time. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results

Residence:			5629 Dovekie Avenue	5629 Dovekie Avenue
Field Sample ID:			A3-TW-0016289-24092-N-WQI	A3-TW-0016289-24092-N-H-WQI
Sample Date:			2024-10-23	2024-10-23
Sample Type:			N	N
BAC (CFU/100ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241023-OLT-03**	
Coliform	None	None	0.00 U	--
E. coli	None	None	0.00 U	--
BAC (CFU/ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241023-OLT-03**	**SDG: 241023-OLT-03**
Heterotrophic Plate Count	None	None	**12.0**	**64.0**
Field Tests (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**		
Free Chlorine	None	4	0.400-0.880	0.400-0.880
GENCHEM (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68285**	
Alkalinity, Total (as CaCO3)	None	None	**57.7**	--
Total Organic Carbon	None	None	0.200 U	--
HC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68285**	
Petroleum Hydrocarbons (as Diesel)	None	None	48.0 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results

Petroleum Hydrocarbons (as Gasoline)	None	None	50.0 UJ	--
Petroleum Hydrocarbons (as Motor Oil)	None	None	48.0 U	--
Petroleum Hydrocarbons, Total	None	None	ND	--

METAL (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68285**	
Copper	1300	1300	**16.5**	--
Lead	15	15	**0.220 J**	--
Mercury	2	2	0.0250 U	--

SVOC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68285**	
1-Methylnaphthalene	None	None	0.250 U	--
2-Methylnaphthalene	None	None	0.250 U	--
Acenaphthylene	None	None	0.250 U	--
Anthracene	None	None	0.250 U	--
Benzo(a)pyrene	0.2	0.2	0.0100 U	--
Benzo(b)fluoranthene	None	None	0.250 U	--
Benzo(g,h,i)perylene	None	None	0.250 U	--
Benzo(k)fluoranthene	None	None	0.250 U	--
Chrysene	None	None	0.250 U	--
Dibenz(a,h)anthracene	None	None	0.250 U	--
Fluorene	None	None	0.250 U	--
Indeno(1,2,3-c,d)pyrene	None	None	0.250 U	--
Naphthalene	None	None	0.250 U	--
Phenanthrene	None	None	0.250 U	--
Pyrene	None	None	0.250 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results

VOC (µg/L)	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA68285	
1,2,4-Trimethylbenzene	None	None	0.260 U	--
1,3,5-Trimethylbenzene	None	None	0.250 U	--
Benzene	5	5	0.250 U	--
Bromodichloromethane	None	None	0.250 U	--
Bromoform	None	None	0.300 U	--
Chloroform	None	None	0.250 U	--
Cumene	None	None	0.250 U	--
Dibromochloromethane	None	None	**0.460 J**	--
Ethylbenzene	700	700	0.250 U	--
m,p-Xylene	None	None	0.400 U	--
n-Butylbenzene	None	None	0.250 U	--
n-Propylbenzene	None	None	0.250 U	--
o-Xylene	None	None	0.250 U	--
sec-Butylbenzene	None	None	0.400 U	--
tert-Butylbenzene	None	None	0.400 U	--
Toluene	1000	1000	0.250 U	--
Total Trihalomethanes	80	None	**0.46**	--
Xylenes, Total	10000	10000	ND	--

Notes:

-- indicates that the sample was Not Analyzed for the analyte
Results in green font also exceed the DOH MCL
Results in blue font also exceed the EPA MCL
Results from G1/G3 sampling, where the G3 result is greater than the G1 result, have a red border and the associated G1/G3 result in parentheses for comparison
mg/L = Milligrams per Liter

CFU/ml = Colony Forming Units per Milliliter

CFU/100ml = Colony Forming Units per 100 Milliliters

µg/L = Micrograms per Liter

Call Center - WQI Checklist

Complaint Ticket

Assign Call Ticket Number	3-22240
Call Date/Time	11/8/2024 12:06:10 PM
Call Center Operator	(b) (6)
Location Type	Residence
Scheduled Visit (Date/Time)	11/14/2024 12:00:00 AM

Call Center Information

Caller/Resident Information

Name	(b) (6)
Address	5947B Gannet Avenue
Command	
Branch	
Property Manager	
Date of move-in	
Number of adults under 65	0
Number of adults 65 and older	0
Number of school age children under 18	0
Number of infants under the age of 2	0
Number and type of pets	0
Call Center Complaint Summary / Initial Notes	0900 - Bathroom Sink two members of the household have been experiencing skin rashes since moving into the residence.

Water Complaint Related Questions

Are you currently experiencing any issue or concern with your water?	Yes
When did you first notice the issue?	
Is this an ongoing issue/concern, or does it only happen at certain times?	Multiple instances intermittently
Do you see any issues with the appearance or odor the water in your home?	
Color or Appearance of Water	Other
	grey water before flushing was ssen at hall bathroom sink
Floating Particles	None
Taste	None
Odor	None
Staining	None
Scaling (visible surface buildup)	No

Call Center - WQI Checklist

Health Concerns

Is anyone in your home experiencing any health concerns because of drinking or exposure to the water?

Skin

Respiratory

Gastrointestinal

Headache

Dizziness

Cough

Vision

Other

In-Person Site Visit

General Issue Information

Does the water problem occur at some or all inside taps?

Are your neighbors experiencing the same issue?

Does it occur with just the cold water, the hot water, or both?

Does it occur only when you first turn on the water or does it occur continuously?

Are you aware of any recent nearby construction or maintenance activities?

Premise Plumbing History

Premise Plumbing History

Water Quality Concerns

Cold water Sampling Location

pH (standard units)

Conductivity (µS/cm)

FreeChlorine (mg/L or ppm)

Cold Temp (degrees F)

Hot water Sampling Location

pH (standard units)

Conductivity (µS/cm)

FreeChlorine (mg/L or ppm)

Hot Temp (degrees F)

Water Quality Notes

Call Center - WQI Checklist

Filtration Systems

Do you have a whole home water filtration system?	No
Do you have point-of-use filters?	Yes
	The resident installed an Aqua Home Group filter on the shower head in the hallway bathroom, this filter is not NSF/ANSI rated.
Kitchen sink	
Refrigerator	
Bathroom - first floor	Shower head
Bathroom - second floor	
Bathroom - second floor	
Bathroom - other	
Who installed the water filter	Resident

Water Fixtures

Staining or Scale visible buildup on water fixtures	True
Kitchen sink - Specific inspection point	Sink faucet
Kitchen sink - Condition of aerator	Looks new / clean
Refrigerator - Specific inspection point	
Refrigerator - Condition of aerator	
Bathroom - first floor - Specific inspection point	Sink faucet
Bathroom - first floor - Condition of aerator	Scaling / Debris / Particulates present
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - second floor - Specific inspection point	
Bathroom - second floor - Condition of aerator	
Bathroom - other - Specific inspection point	
Bathroom - other - Condition of aerator	

Other Concerns

Water Presure	Good
Hot Water Temperature	Good
Cross-Connection	
Irrigation	

Summary and Recommendations

Water Heater Replacement	No
Fixture Replacement	No
Navy to follow-up	No
Other	No

Other Site Visit Notes

Call Center - WQI Checklist

Photos

Ticket Number	22240
Location	First Floor - Bathroom - Sink
Title	aerator

Call Center - WQI Checklist

Photos

Ticket Number	22240
Location	Other
Title	hall bathroom aerator

Call Center - WQI Checklist

Photos

Ticket Number	22240
Location	Other
Title	kitchen sink aerator

Call Center - WQI Checklist

Photos

Ticket Number	22240
Location	Other
Title	discolored water

Thursday 14 November 2024, 0900

Zone – A3, 5947B Gannet Ave
Location Code: A3-GANN5947B

BLUF

The resident requested a WQI because two members of the household have been experiencing skin rashes since moving into the residence. The resident stated that the rash is most irritated after bathing, and that while showering it feels as though the water is burning her skin. The residents' daughter has also been experiencing periodic skin rashes and irritation after bathing. The resident requested a water sample from the hallway bathroom sink and that the shower be inspected. Water quality parameters collected on site did not indicate any evidence of causative agents that may contribute to skin irritation. The resident and her daughter have been seeing a dermatologist, it is recommended that they continue seeing their doctor. Water quality parameters collected were within expected ranges. No sheen, particles, cloudiness, or odors were observed in the hot or cold water. Gray discolored water was observed coming from the hot water in the hallway bathroom (Figure 4), it is recommended maintenance flush the water heater. Based on the observations made during the WQI inspection, no immediate concerns regarding water quality were identified.

A. Resident Demographic / Concerns

- Household consists of (2) adults and one (1) child.
- Resident since April 2024.
- Upon moving into the home, the resident developed a persistent skin rash. The resident stated that her skin is most irritated after bathing in the water and that while showering it feels as though her skin is burning. The residents' daughter has also been experiencing periodic skin rashes and irritation. The resident stated that her husband has not experienced any skin irritation. Water quality parameters collected on site did not indicate any evidence of causative agents that may contribute to skin irritation. The resident and her daughter have been seeing a dermatologist.

B. Water Quality Observations and Results

- Unit was previously sampled on 31 October 2024; EDWM sampling results are still pending.
- Gray discoloration was observed coming from the hot water in the hallway bathroom sink. After flushing the hot water for approximately 5 minutes the grey color dissipated.
- No sheen, particles, cloudiness or odors, were observed from hot or cold water.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the hallway bathroom sink and kitchen sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot water and cold-water samples from the hallway bathroom sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the hallway bathroom sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.24 (cold)
    - 7.40 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 262.11 µS/cm (cold)
    - 274.52 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.00 NTU (cold)
    - 0.61 NTU (hot)

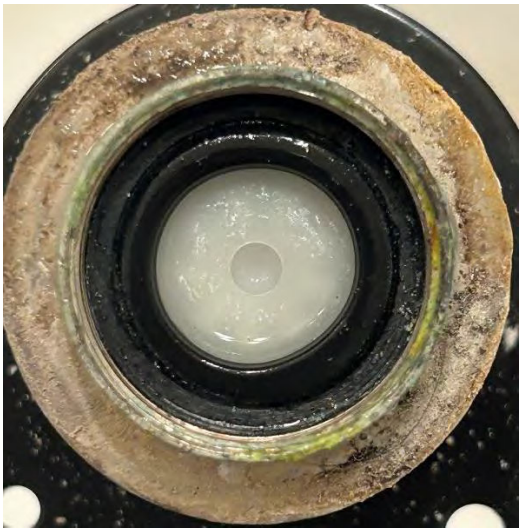
  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
    - 0.48 mg/L (cold)
    - 0.44 mg/L (hot)

  - Temperature
    - 78.49 °F (cold)
    - 110.87 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 127.2 °F
  - Master bathroom sink – 128.5 °F

- **Figure 1.** Interior view of kitchen sink aerator. No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in good condition.

- **Figure 2.** Interior view of the hallway bathroom sink aerator. No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in fair condition.



- **Figure 3.** Interior view of the master bathroom sink aerator. No debris was observed. Scale is built up on the exterior of the aerator. The aerator is in fair condition.

- **Figure 4.** The discolored grey water that initially came from the hot water in the hallway bathroom sink.

C. Hot Water Heater

The water heater was inaccessible during the WQI.

D. Point-of-Use Treatment

The resident installed an Aqua Home Group filter on the shower head in the hallway bathroom, this filter is not NSF/ANSI rated.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures could reach a temperature of 115°F or above.
- No sheen, particles, cloudiness, discoloration, odors or unusual observations were made from the cold water; water was clear.
- Grey water was observed coming from the hot water in the hallway bathroom sink. The grey water dissipated after flushing for 5 minutes. The resident stated that they have observed the grey water several times. There are a few factors that could contribute to the discoloration of the water. These factors include age of the water heater/pipes, sediment build up, and mineral build up. The water heater was inaccessible during the WQI. The age, condition, and set temperature of the water heater was unable to be determined. It is recommended that maintenance flush the water heater in response to the grey water that was observed. No sheen, particles, cloudiness, or odors were observed from the hot water.

- There was no apparent mold build up or other unusual observation made about the fixtures that could be contributing to the residents' skin irritation after showering. Water quality parameters collected on site did not indicate any evidence of causative agents that may contribute to skin irritation. Further conclusions may be made by a medical professional.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations

- Follow up with EDWM water quality results when available.
- It is recommended that the residents continue to see a medical professional to help with any dermatological issues.
- It is recommended that maintenance flush the water heater in response to the grey water that was observed in the hot water.

Conclusion

The inspection was conducted at the request of the residents due to their skin irritation. It is recommended to continue seeing a medical professional. It is recommended maintenance flush the water heater in response to the grey water that was observed coming from the hot water. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action regarding this WQI is necessary at this time. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

Residence:			5947B Gannet Avenue	5947B Gannet Avenue
Field Sample ID:			A3-TW-0016559-24092-N-WQI	A3-TW-0016559-24092-N-H-WQI
Sample Date:			2024-11-14	2024-11-14
Sample Type:			N	N
BAC (CFU/100ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241114-OLT-17**	
Coliform	None	None	0.00 U	--
E. coli	None	None	0.00 U	--
BAC (CFU/ml)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: 241114-OLT-17**	**SDG: 241114-OLT-17**
Heterotrophic Plate Count	None	None	**24.0**	**18.0**
Field Tests (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**		
Free Chlorine	None	4	0.440-0.480	0.440-0.480
GENCHEM (mg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68800**	
Alkalinity, Total (as CaCO3)	None	None	**58.6**	--
Total Organic Carbon	None	None	0.200 U	--
HC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68800**	
Petroleum Hydrocarbons (as Diesel)	None	None	48.0 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

Petroleum Hydrocarbons (as Gasoline)	None	None	50.0 UJ	--
Petroleum Hydrocarbons (as Motor Oil)	None	None	48.0 U	--
Petroleum Hydrocarbons, Total	None	None	ND	--
METAL (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68800**	
Copper	1300	1300	**15.1**	--
Lead	15	15	**0.160 J**	--
Mercury	2	2	0.0250 U	--
SVOC (µg/L)	**DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents**	**Environmental Protection Agency Maximum Contaminant Levels**	**SDG: DA68800**	
1-Methylnaphthalene	None	None	0.250 U	--
2-Methylnaphthalene	None	None	0.250 U	--
Acenaphthylene	None	None	0.250 U	--
Anthracene	None	None	0.250 U	--
Benzo(a)pyrene	0.2	0.2	0.0100 U	--
Benzo(b)fluoranthene	None	None	0.250 U	--
Benzo(g,h,i)perylene	None	None	0.250 U	--
Benzo(k)fluoranthene	None	None	0.250 U	--
Chrysene	None	None	0.250 U	--
Dibenz(a,h)anthracene	None	None	0.250 U	--
Fluorene	None	None	0.250 U	--
Indeno(1,2,3-c,d)pyrene	None	None	0.250 U	--
Naphthalene	None	None	0.250 U	--
Phenanthrene	None	None	0.250 U	--
Pyrene	None	None	0.250 U	--

Table X-X
Non-EDWM Water Quality Investigation (WQI) Requested Samples (via EOC)
Chemistry Results
Drinking Water Sampling, JBPHH, Oahu, Hawaii

VOC (µg/L)	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA68800	
1,2,4-Trimethylbenzene	None	None	0.260 U	--
1,3,5-Trimethylbenzene	None	None	0.250 U	--
Benzene	5	5	0.250 U	--
Bromodichloromethane	None	None	0.250 U	--
Bromoform	None	None	0.300 U	--
Chloroform	None	None	0.250 U	--
Cumene	None	None	0.250 U	--
Dibromochloromethane	None	None	0.250 U	--
Ethylbenzene	700	700	0.250 U	--
m,p-Xylene	None	None	0.400 U	--
n-Butylbenzene	None	None	0.250 U	--
n-Propylbenzene	None	None	0.250 U	--
o-Xylene	None	None	0.250 U	--
sec-Butylbenzene	None	None	0.400 U	--
tert-Butylbenzene	None	None	0.400 U	--
Toluene	1000	1000	0.250 U	--
Total Trihalomethanes	80	None	ND	--
Xylenes, Total	10000	10000	ND	--

Notes:

-- indicates that the sample was Not Analyzed for the analyte
Results in green font also exceed the DOH MCL
Results in blue font also exceed the EPA MCL
Results from G1/G3 sampling, where the G3 result is greater than the G1 result, have a red border and the associated G1/G3 result in parentheses for comparison
mg/L = Milligrams per Liter

CFU/ml = Colony Forming Units per Milliliter

CFU/100ml = Colony Forming Units per 100 Milliliters

µg/L = Micrograms per Liter

Thursday 27 November 2024, 1030

Zone – F2, 1705 Tiare Court
Location Code: F2-TIAR1705

BLUF

The resident reported experiencing a sore throat after consuming the tap water from their kitchen sink. Water quality parameters collected were within expected ranges. No sheen, particles, cloudiness, or odors were observed in the hot or cold water. Based on the observations made during the WQI inspection, no immediate concerns regarding water quality were identified. The resident was advised to seek medical attention to address any potential illnesses.

A. Resident Demographic / Concerns

- Household consists of two (2) adults and two (2) children.
- Resident for approximately two months.
- Approximately two weeks upon moving in, the resident reported experiencing a sore throat after consuming tap water from their kitchen sink. No one else in the household experienced a sore throat after consuming tap water. The resident reported no unusual odors/taste upon consumption, no visual observations were made.

B. **Water Quality Observations and Results**

- Unit was previously sampled on 30 April 2024. Copper, alkalinity, and lead were detected at concentrations below project screening levels.
- No unusual observations.
- No sheen, particles, cloudiness or odors, were observed from hot or cold water.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the master bathroom sink and kitchen sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold water samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the hallway bathroom sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.22 (cold)
    - 7.45 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 246.60 µS/cm (cold)
    - 260.44 µS/cm (hot)

- Turbidity - (Expected Range: < 5.0 NTU)
  - 0.00 NTU (cold)
  - 0.00 NTU (hot)

- Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
  - 0.51 mg/L (cold)
  - 0.63 mg/L (hot)

- Temperature
  - 77.56 °F (cold)
  - 98.15 °F (hot)

- WQI hot water temperature results collected.
  - Downstairs hallway bathroom sink – 116.2 °F
  - Upstairs hallway bathroom sink – 115.3 °F
  - Master bathroom sink – 118.7 °F

- Figure 1. Interior view of kitchen sink aerator. No debris was observed. The aerator is in good condition.

- Figure 2. Interior view of the downstairs hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 3. Interior view of the master bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 4. Interior view of the upstairs hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

C. Hot Water Heater

- 80-gallon electric solar water heater manufactured by American Water Heater Co. on 4 July 2018.
- Water heater thermostat dial was set to approximately 125 °F.
- Visual observation showed the water heater to be in good condition, with no visual evidence of corrosion.
- No visible maintenance records found on the water heater.
- The pipe material is copper.

D. Point-of-Use Treatment

No filters installed.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures, except the kitchen sink, could reach a temperature of 115°F or above.
- No sheen, particles, cloudiness, discoloration, odors or unusual observations were made from the cold water. The water observed to be clear.

- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations
- It is recommended that the resident seek medical attention to address any potential illnesses.
- Follow up with EDWM water quality results when available.
- No further action is required.

Conclusion

The inspection was conducted at the request of the residents due to experiencing a sore throat after consumption of their kitchen tap water. It is recommended to continue seeing a medical professional. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action regarding this WQI is necessary at this time. Pending EDWM analytical results will determine if the water is safe to drink. The resident will then be informed of their results by the CPLO.

Friday 13 December 2024, 0900

Zone – A3, 4807B West Ekolu Way
Location Code: A3-WEKO4807B

BLUF

This WQI was requested following a resident observing metal shavings, sheen, and chlorine odor coming from their kitchen sink. The resident also reported that one of their children developed skin rashes, and experienced nasal congestion and coughing. Medical treatment was sought after onset of symptoms. Following medical treatment, these symptoms have not reappeared. Non-floating, black particulates were observed during the hot water flush at the downstairs hallway bathroom hot water supply. Additionally, excessive air bubbles forming into a thin foam on top of the water were observed coming from the hot water supply in the downstairs hallway bathroom. These observations were not seen throughout the residence and subsided after several minutes of flushing the hot water. No sheen, cloudiness, or odors were observed elsewhere in either the hot or cold water.

Based on the observations made during the WQI inspection, no immediate concerns regarding water quality were identified. However, it is recommended to thoroughly flush both the water heater and all the home's the fixtures to remove any sediment/particulate build-up. The resident was advised to continue to seek medical attention to address any reoccurring illnesses. The resident may use NSF/ANSI rated filters to reduce aesthetic impurities.

A. Resident Demographic / Concerns
- Household consists of two (2) adults, four (4) children, and three (3) pets.
- Resident since December 2022.
- The resident reported observing metal shavings, sheen, and chlorine odor coming from their kitchen sink. The resident also reported that one of their children developed skin rashes, as well as nasal congestion and coughing.

B. **Water Quality Observations and Results**
- Unit was previously sampled on 22 February 2024. Arsenic, copper, lead, barium, total petroleum hydrocarbons, selenium, and total trihalomethanes were detected at concentrations below project screening levels.
- Excessive air bubbles were observed from the hot water at the downstairs hallway bathroom only, such that a foam was deposited on the surface of the water. This foam was confirmed to be composed of air because the bubbles dissipated after a few minutes had transpired. This foam was confirmed by the resident to be the reported "sheen" observed previously.
- Black particulates were observed in the downstairs hallway bathroom sink in hot water only. This effect was observed for several seconds while flushing. Approximately 5-6 individual particulates were observed, each were about the size of a grain of sand.

- Personnel on-site
  - Water Quality Action Team (WQAT) – Collected samples from the kitchen sink for rapid TPH test.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigation (WQI) Team.
  - Extended Drinking Water Monitoring (EDWM) – collected hot and cold-water samples from the kitchen sink.

- Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the hallway bathroom sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.14 (cold)
    - 7.14 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 262.27 µS/cm (cold)
    - 287.28 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.86 NTU (cold)
    - 0.00 NTU (hot)

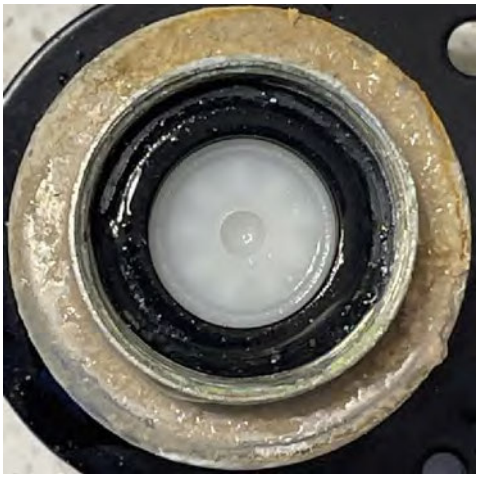
  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
    - 0.71 mg/L (cold)
    - 0.68 mg/L (hot)

  - Temperature
    - 77.56 °F (cold)
    - 98.15 °F (hot)

- WQI hot water temperature results collected.
  - Downstairs hallway bathroom sink – 123.1 °F
  - Master bathroom sink – 120.2 °F
  - Upstairs hallway bathroom sink – 118.3 °F

- Figure 1. Interior view of downstairs hallway bathroom aerator. No debris was observed. The aerator is in fair condition.

- Figure 2. Interior view of the kitchen sink aerator. No debris was observed. The aerator is in good condition.



- Figure 3. Interior view of the master bathroom sink aerator. No debris was observed. The aerator is in fair condition.

- Figure 4. Interior view of the upstairs hallway bathroom sink aerator. No debris was observed. The aerator is in fair condition.

- Figure 5. Alternative views of the foam caused by air bubbles observed from the hot water at the downstairs bathroom sink. The bubbles dissipated after several minutes.

- Figure 6. External corrosion on the water heater adjacent to circulating pump, appeared to be spray painted over.

C. Hot Water Heater

- 119-gallon solar electric water heater manufactured by American Water Heater Co. in October 2013.
- Water heater thermostat dial was set to approximately 135 °F.
- Visual observation showed the water heater to be in fair condition, with some visual evidence of external corrosion. Refer to Figure 6.

- Visible maintenance records found on the water heater indicate last service was on 18 November 2022.
- The supply piping material is copper.

D. Point-of-Use Treatment

No filters installed.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both EDWM team and WQI team. WQI team took hot water temperatures with an instant read digital thermometer and the EDWM team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The WQI team confirmed all hot water fixtures, except the kitchen sink, could reach a temperature of 115°F or above.
- All water quality parameters collected during the EDWM sampling were within expected ranges.
- EDWM analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations

- It is recommended to thoroughly flush the water heater and the household plumbing, including all the fixtures to remove the entrained air and any sediment/particulate build-up (as demonstrated by the particles observed in Figure 5.
- Follow up with EDWM water quality results when available.
- No further action is required.

Conclusion

The inspection was conducted at the request of the residents due to observing their water to contain metal shavings, a sheen, and the water having a strong chlorine smell and taste. During inspection, excessive air bubbles and black particulates were observed in the hot water. No sheen or unusual/chlorine odors were observed. It is recommended to thoroughly flush the water heater including all the fixtures to remove any sediment/particulate build-up. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action regarding this WQI is necessary at this time. The resident will be informed of their analytical results when available by the CPLO.

Monday 16 December 2024, 1300

Zone – H1, 6366 Papaya Lane
Location Code: H1-PAPA6366

BLUF

This WQI was requested following a resident reporting an odor described as "machine-shop like" coming from their kitchen sink, after sink was sampled on 9 December 2024. No sheen, cloudiness, or odors were observed in either the hot or cold water. Based on the observations made during the WQI inspection, no immediate concerns regarding water quality were identified.

A. Resident Demographic / Concerns

- Household consists of two (2) adults, five (5) children, and two (2) dogs.
- Resident for approximately one (1) year next February.
- The resident reported an odor emanating from their kitchen sink after it was sampled on 9 December 2024. This odor was described as "machine-shop like", additional details were not provided.

B. **Water Quality Observations and Results**

- Unit was previously sampled on 9 December 2024; however, the sample was collected downstream from an inline filter, thus this appointment serves as a resample.
- No unusual observations.
- No sheen, particles, cloudiness or odors, were observed from either the hot or cold water.

- Water Quality Action Team (WQAT) on-site
  - Water Quality Sampling Team – Collected hot and cold samples from the kitchen sink.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water quality investigator(s) – (b) (6) - collected rapid TPH samples from the kitchen sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.13 (cold)
    - 7.10 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 252.15 µS/cm (cold)
    - 270.73 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.00 NTU (cold)
    - 0.00 NTU (hot)

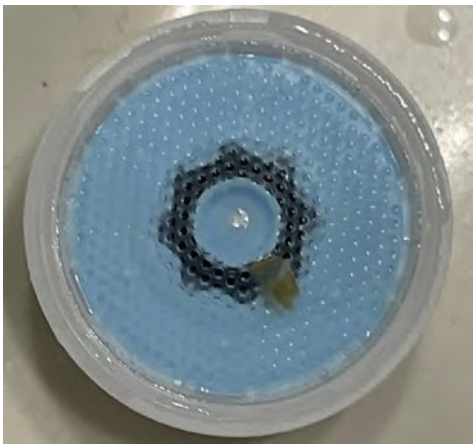
  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)

  - 0.61 mg/L (cold)
  - 0.54 mg/L (hot)

- Temperature
  - 80.08°F (cold)
  - 112.50 °F (hot)

- WQI hot water temperature results collected.
  - Downstairs hallway bathroom sink – 119.1 °F
  - Upstairs hallway bathroom sink – 116.2 °F

- Figure 1. Interior view of the kitchen sink aerator. Some debris of unknown material were observed. The aerator is in good condition.



- Figure 2. Interior view of the downstairs hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 3. Interior view of the upstairs hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

C. Hot Water Heater

- 119-gallon solar electric water heater manufactured by Sun Earth Inc. in June 2010.
- Water heater thermostat dial was set to approximately 125 °F.
- Visual observation showed the water heater to be in good condition with no signs of external corrosion
- No visible maintenance records were found on the water heater.
- The supply piping material is copper.

D. Point-of-Use Treatment

Hydroviv Under Sink Water Filter (42 & 53 NSF/ANSI rated).

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both water quality sampling team and investigators. The water quality investigators took hot water temperatures with an instant read digital thermometer and the Water Quality Sampling Team took measurements with an Aqua Troll 600. The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The Water Quality Investigators confirmed all hot water fixtures, except the kitchen sink, could reach a temperature of 115°F or above.
- All water quality parameters collected during sampling were within expected ranges.
- Analytical results will determine if drinking water complies with the applicable standards.
- The resident collected a water sample, in a clean jar on 10 December 2024, and which reportedly was when the odor was present. However, during the visit neither the resident nor the Investigators could detect the odor.

F. Recommendations

- Follow up with analytical water quality results when available.
- No further action is required.

Conclusion

The inspection was conducted at the request of the residents after reporting a "machine-shop like" odor coming from their kitchen sink. No odors could be identified. All water quality parameters collected during the inspection were within expected ranges. Based on the observations made during the inspection, no further action regarding this WQI is necessary at this time. The resident will be informed of their analytical results when available by the CPLO.

Wednesday 18 December 2024, 1300

Zone – D3, Building 4071H
Location Code: D3-BLDG4071H

BLUF

This WQI was conducted at the request of building personnel who expressed concern over general water quality. No specific concerns with the water supply were made. There was no sheen, cloudiness, or odors observed in the cold water. Based on the observations made during the WQI inspection, such as the accumulation of copper on the aerators, it is recommended to conduct a thorough inspection for stray electrical currents and ensure proper grounding of the facility's electrical system. No additional other concerns regarding water quality were identified.

A. Resident Demographic / Concerns
- Facility consists of individuals employed under the (b) (3) (A)
- No specific concerns were reported.

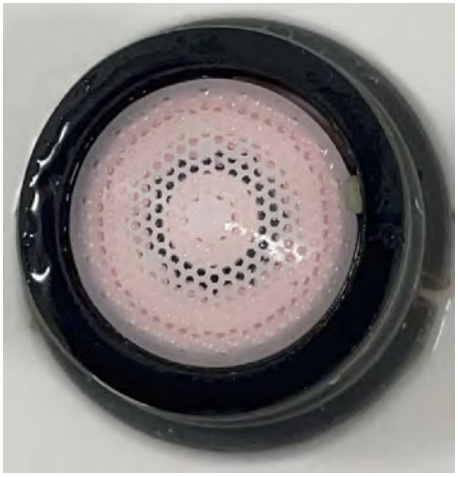
B. **Water Quality Observations and Results**
- Unit was previously sampled on 18 October 2023. Copper, chromium, barium, and selenium were detected at concentrations below project screening levels.
- No unusual observations, water was clear and without noticeable odor.

- Water Quality Action Team (WQAT) on-site
  - Water Quality Sampling Team – Collected cold-water samples from the northeast women's left bathroom sink.
  - Community Public Liaison Officer (CPLO) – Not present.
  - Deputy for Environment & Remediation, NCTF-Red Hill NAVFAC Hawai'i – CDR Ben Dunn, P.E.
  - Water quality investigator(s) – (b) (6) – Collected rapid TPH samples from the northeast men's bathroom sink, northeast women's left and right bathroom sinks, southeast men's bathroom left and right sinks, and southeast women's bathroom left and right sinks.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the northeast women's bathroom **left** sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.40 (cold)
  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 264.87 µS/cm (cold)
  - Turbidity - (Expected Range: < 5.0 NTU)
    - 1.06 NTU (cold)
  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
    - 0.63 mg/L (cold)

- Temperature
  - 77.94 °F (cold)

- WQI hot water temperature results collected.
  - No hot water on premises



- Figure 1. Interior view of the northeast men's bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 2. Interior view of the northeast women's bathroom left and right sink aerator, respectively. Accumulation of copper corrosion was observed. This may be due to stray electrical currents or improper grounding in the electrical system. The aerator is in fair condition.

- Figure 3. Interior view of the southeast men's bathroom left and right sink aerator, respectively. Staining of the screen can be observed. The aerator is in fair condition.

- Figure 4. Interior view of the southeast women's bathroom left and right sink aerator, respectively. A rust particle was observed in the left sink's aerator along with staining on both aerators. The aerator is in fair condition.

C. Hot Water Heater

- No water heater in the facility

D. Point-of-Use Treatment

No filters installed.

E. Overall Assessment

- All water quality parameters collected during sampling were within expected ranges.
- Analytical results will determine if drinking water complies with the applicable standards.
- Copper corrosion accumulation as shown in Figure 2. may be indicative of stray electrical currents or improper grounding in the water piping system

F. Recommendations

- It is recommended to conduct a stray current/electrical grounding inspection on the water piping system.
- Follow up with water quality analytical results when available.

- No further action is required.

Conclusion

This WQI was conducted at the request of building personnel who expressed concern over general water quality but reported no specific concerns. There was no sheen, cloudiness, or odor observed in the cold water. Based on the observations made during the WQI inspection, it is recommended to conduct a thorough inspection for stray electrical currents and ensure proper grounding of the facility's electrical system. No other concerns regarding water quality were identified.

Thursday 19 December 2024, 1500

Zone – A3, 6585A 104th St
Location Code: A3-104S6585A

BLUF

This WQI was requested following a resident reporting particles and cloudiness in their water supply. Additionally, the resident and their daughter reported dermatological issues such as dry skin and rashes. No sheen, cloudiness, or odors were observed in either the hot or cold water. Black mold was discovered throughout the shower and doorway of the hallway bathroom. Based on the observations made during the WQI inspection, it is recommended to conduct an inspection of the residence to confirm the extent of the mold infestation and to minimize any associated health risks.

A. Resident Demographic / Concerns

- Household consists of four (4) adults, one (1) child.
- Resident for approximately three (3) years.
- The resident reported particles and cloudiness in their water supply, along with experiencing dermatological issues such as dry skin and rashes. The resident who reported the concern was not present during the WQI to discuss the particles and cloudiness. However, their adult daughter was able to provide more information about the dry skin and rashes. To their knowledge, only the resident and the daughter were experiencing these skin issues. It was not clear whether the other two residents were experiencing symptoms. The resident was advised to seek a medical professional.

B. **Water Quality Observations and Results**

- Unit was not previously sampled.
- No sheen, particles, cloudiness or odors, were observed from either the hot or cold water.
- What appeared to be black mold was observed throughout in multiple locations inside the hallway bathroom shower/doorway.
- The cold water shut off valve under the kitchen sink was leaking under the cabinet when the valve was closed.

- Water Quality Action Team (WQAT) on-site
  - Water Quality Sampling Team – Collected hot and cold samples from the kitchen sink.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigator(s) – (b) (6) - collected rapid TPH samples from the kitchen sink and hallway bathroom sink.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.29 (cold)
    - 7.37 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)

    - 309.06 µS/cm (cold)
    - 352.92 µS/cm (hot)

  - Turbidity - (Expected Range: < 5.0 NTU)
    - 0.00 NTU (cold)
    - 0.00 NTU (hot)

  - Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
    - 0.66 mg/L (cold)
    - 0.72 mg/L (hot)

  - Temperature
    - 86.90 °F (cold)
    - 114.75 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 130.0 °F

- Figure 1. Interior view of the kitchen sink aerator. Debris consisting of black rubber-like material, possibly from a gasket, were observed. The aerator is in good condition.

- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in fair condition.

- Figure 3. View of the hallway bathroom shower and doorway, respectively. Black mold can be seen.

C. Hot Water Heater

- 40-gallon gas water heater manufactured by Rheem Sales Company, Inc. in September 2018.
- Water heater thermostat dial was set to approximately 135 °F.
- Visual observation showed the water heater to be in good condition with no signs of external corrosion
- No visible maintenance records were found on the water heater.
- The supply piping material is copper.

D. Point-of-Use Treatment

No filters

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both water quality sampling team and investigators. The water quality investigators took hot water temperatures with an instant read digital thermometer and the Water Quality Sampling Team took measurements with an Aqua Troll 600. The difference in

decimal places in the two hot water temperatures listed is due to the different instruments. The Water Quality Investigators confirmed all hot water fixtures could reach a temperature of 115°F or above.

- Potential black mold was observed in the hallway bathroom. It was located within the shower and on the door.
- All water quality parameters collected during sampling were within expected ranges.
- Analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations

- Follow up with analytical water quality results when available.
- Confirm potential mold sites.
- No further action is required.

Conclusion

This WQI was requested due to a resident reporting particles and cloudiness in the water supply and experiencing dermatological issues like dry skin and rashes along with their daughter. Particles were found in the kitchen aerator, this debris consisted of black rubber-like material, possibly from a gasket. However, no cloudiness could be identified. All water quality parameters collected during the inspection were within expected ranges. However, suspected black mold was observed in the hallway bathroom. Confirmation by a mold specialist is recommended to assess the extent of the potential mold infestation and minimize health risks. The resident will then be informed of their analytical results when available by the CPLO.

Monday 23 December 2024, 0800

Zone – D2, 1808 Porter Ave
Location Code: D2-PORT1808

BLUF

This WQI was requested following a resident reporting cloudiness in their hot water. The cloudiness observed in the hot water was the result of air bubbles present in the hot water. No sheen, or odors were observed in either the hot or cold water. Based on the observations made during the WQI inspection, such as low free chlorine in the hot water, it is recommended to conduct maintenance such as flushing of the hot water heater, checking the state of the sacrificial anode, and flushing the hot water at all fixtures.

A. Resident Demographic / Concerns
- Household consists of one (1) adult.
- Resident for approximately nine (9) years.
- The resident reported observing cloudiness in their hot water right before their deployment in the end of March 2024. Upon returning home, the resident requested an inspection to determine their water quality. No other concerns regarding taste or odor were reported.

B. **Water Quality Observations and Results**
- Unit was not previously sampled.
- No sheen or odors were observed from either the hot or cold water. Cloudiness was observed in the hot water. The resident confirmed the observed cloudiness during the inspection was the same they had observed before the inspection. The cloudiness was determined to be air bubbles.
- Free chlorine in the hot water was 0.06 mg/L, which is below the 0.20 – 4.00 mg/L expected range. The resident did not recall the last time their water heater was serviced.

- Water Quality Action Team (WQAT) on-site
  - Water Quality Sampling Team – Collected hot and cold samples from the kitchen sink.
  - Community Public Liaison Officer (CPLO) – (b) (6) .
  - Water Quality Investigator(s) (b) (6) - collected rapid TPH samples from the kitchen. sink, hallway bathroom sink, and master bathroom left and right sinks.
  - Hawaii Department of Health Safe Drinking Water Branch (HDOH SDWB) – Not present.

- Results of field testing from the kitchen sink
  - pH – (Expected Range: 6.5 to 8.5)
    - 7.26 (cold)
    - 7.91 (hot)

  - Conductivity - (Expected Range 0 to 800 µS/cm)
    - 277.06 µS/cm (cold)
    - 306.08 µS/cm (hot)

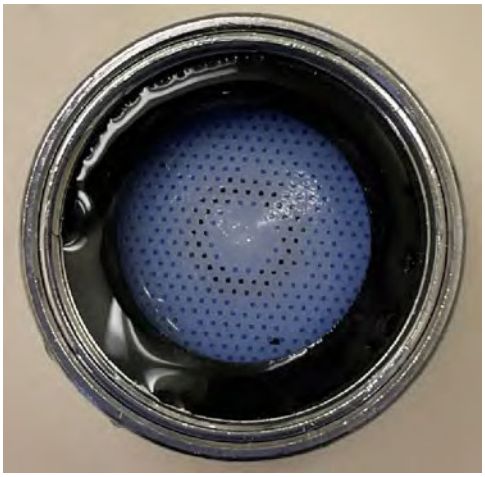
- Turbidity - (Expected Range: < 5.0 NTU)
  - 0.00 NTU (cold)
  - 0.00 NTU (hot)

- Free Chlorine - (Expected Range: 0.20 to 4.00 mg/L)
  - 0.74 mg/L (cold)
  - 0.06 mg/L (hot) See **Section E.**

- Temperature
  - 75.58 °F (cold)
  - 98.44 °F (hot)

- WQI hot water temperature results collected.
  - Hallway bathroom sink – 115.8 °F
  - Master bathroom left sink – 119.3 °F
  - Master bathroom right sink – 116.2 °F

- Figure 1. Interior view of the kitchen sink aerator. Black particles were observed. Aerator is in good condition.



- Figure 2. Interior view of the hallway bathroom sink aerator. No debris was observed. The aerator is in good condition.

- Figure 3. View of the master bathroom left and right sink aerators, respectively. No debris was observed. The aerator is in good condition.

C. Hot Water Heater

- 65-gallon electrical water heater manufactured by Ruud (Rheem Manufacturing Co.) in March 2006.
- Water heater thermostat dial was set to approximately 115-120 °F.
- Visual observation showed the water heater to be in fair condition with little to no signs of external corrosion.
- No visible maintenance records were found on the water heater.
- The supply piping material is copper.

D. Point-of-Use Treatment

Mineral Stream shower heads were installed in all showers and are not NSF/ANSI rated. Resident stated its purpose was solely for adjusting the water pressure and not to filter out impurities.

E. Overall Assessment

- Temperature was measured at all available fixtures during inspection. Hot water temperature was measured by both water quality sampling team and investigators. The Water Quality Investigators took hot water temperatures with an instant read digital thermometer and the Water Quality Sampling Team took measurements with an Aqua Troll 600 (Water Quality Meter). The difference in decimal places in the two hot water temperatures listed is due to the different instruments. The Water Quality Investigators confirmed all hot water fixtures, except the kitchen sink, could reach a temperature of 115°F or above.
- Free chlorine measured at 0.06 mg/L in the hot water lines was lower than the expected range (0.20 – 4.00 mg/L). Considering the age of the water heater and the possible lack of water heater maintenance, it is possible that sediment, corrosion, or biofilm may have reduced disinfection residual.
- Analytical results will determine if drinking water complies with the applicable standards.

F. Recommendations

- Follow up with analytical water quality results when available.
- It is recommended to perform water heater maintenance (i.e., flushing, inspecting sacrificial anode, etc.) to remove sediment/corrosion particles. Additional flushing of the hot water in all the fixtures is recommended after water heater maintenance to reestablish disinfection residual.
- No further action is required.

Conclusion

This WQI was requested due to a resident reporting cloudiness in their hot water. Cloudiness observed in the hot water was the result of air bubbles present in the hot water supply line. No sheen or odors were observed in either hot or cold water. All water quality parameters collected during the inspection were within expected ranges, apart from free chlorine in the hot water. Based on the observations made during the inspection, it is recommended to perform maintenance on the water heater and flush the hot water supply lines in all fixtures to reestablish disinfection residual. The resident will be informed of their analytical results when available by the CPLO.